

SERVICE MANUAL



AIR-7:
Canadian Model
AEP Model
E Model

AIR-8:
US Model

SPECIFICATIONS

Circuit system	AIR/PSB/AM: Dual conversion superheterodyne	EBP-6 battery case (optional) using four IEC designation R14 batteries (size C)
Frequency range	FM: Superheterodyne	Approx. 9 hours for air band, PSB and AM reception
	AIR: 108-136 MHz	Approx. 10 hours for FM reception
	PSB: 144-174 MHz (Canadian and AEP-2 models of AIR-7, AIR-8)	When listening for four hours a day at normal volume, using Sony SUM-3(NS) New Super batteries
	FM: 76.0-108.0 MHz	Approx. 90 x 179 x 50 mm (w/h/d) (3 1/2 x 7 1/4 x 2 inches)
	AM: 150-2,194 kHz	including projecting parts and controls, not including the helical antenna
	LW: 150-530 kHz (150-529 kHz*)	Approx. 600g (1 lb 5 oz)
	MW: 531-1602 kHz (530-1600 kHz*)	including batteries, shoulder strap and the helical antenna
	SW: 1602-2194 kHz (1601-2194 kHz*)	
	* MW tuning interval: 10 kHz	
Antennas	AIR/PSB/FM: Helical antenna	
	MW/LW/SW: Built-in ferrite bar antenna	
	External antenna jack	
	AIR/PSB/FM: BNC connector	
	AM (LW/MW/SW): minijack	
Speaker	Approx. 7 x 3.5 cm (2 7/8 x 1 1/8 inches)	
Power output	400 mW (at 10% harmonic distortion)	
Output	Earphone jack (minijack)	
Power requirements	6 V dc	
	Four IEC designation R6 batteries (size AA) (for radio/computer back-up)	
	BP-23 rechargeable battery pack (optional)	
	DC IN 6 V jack accepts:	
	Appropriate ac power adaptor listed on page 2 for use on house current	
	DCC-127A or DCC-120 car battery cord (optional) for use with 12 V car battery	
	DCC-240 car battery cord (optional) for use with 24 V car battery	

Note: There are two types of AEP mode.
These differences are as follows.
AEP-1: 3 bands (AIR, AM and FM)
AEP-2: 4 bands (AIR, PSB, AM and FM)

AIR BAND/FM/AM PLL SYNTHESIZED RECEIVER

PSB/AIR/FM/AM PLL SYNTHESIZED RECEIVER

SONY®



HOUSE CURRENT

Where used	AC power adaptor	Input voltage of adaptor
Canadian	AC-9	120 V ac, 60 Hz
AEP	AC-456C	220 V ac, 50 Hz (110 V ac adjustable, 50/60 Hz)
E	AC-4A	110, 120, 220 or 240 V ac adjustable, 50/60 Hz
US	AC-12	120 V ac, 60 Hz

MELF (Metal Electrodes Face-Bonding) Components

Warning

If MELF components are forcibly removed from the printed circuit board with pincers or pliers, the circuit board pattern is likely to peel away. Always remove MELF components according to the procedure described on the next page.

FEATURES

- The AIR-7 and AIR-8 portable receiver receives the air traffic control frequencies, 108–136MHz, as well as standard FM and AM broadcasts. With Canadian, AEP-2 models of AIR-7 and AIR-8, PSB (144–174MHz) can also be received.
- The quartz controlled PLL (Phase Locked Loop) synthesizer system uses a microcomputer to make pinpoint tuning easy. The tuned frequency is displayed digitally.
- Choice of direct, scan, manual or memory tuning.
- Up to 40 (Canadian, AEP-2 models of AIR-7 and AIR-8) or 30 (AEP-1, E models of AIR-7) stations can be memorized so that they can be tuned in at the press of a key.
- Air band and PSB can be received more easily with the memory scanning, program function, priority function and delay function.
- Squelch control to suppress noise while tuning and during intervals between communications.
- The key protect function operates at the press of a key to lock the keys on the front face so they cannot be operated by accident.
- Helical antenna for high sensitivity and selectivity has BNC connector for attachment to the receiver.
- Four different power sources: batteries, house current, rechargeable battery pack or car battery.

* PSB (Public Service Band)

On the PSB, you can monitor police, fire, forestry conservation, VHF weather, marine, highway maintenance, land mobile, and other public safety radio services. The general frequency allocation is shown on the dial scale. NOTICE: In certain localities, it is illegal to listen to police or other governmental transmissions. Check with your local authorities.

MELF components are soldered directly to the surface of the printed circuit board.

MELF resistors and capacitors have the same dimensions and are distinguished by their background colors: light brown for resistors, and pink or light green for capacitors.

The MELF resistor color coding is the same as for conventional resistors, and MELF capacitor color coding is the same as for tube-type ceramic capacitors.

Components larger than resistors and without a color code are cross conductors, which are used instead of jumper wires.

1. Structure

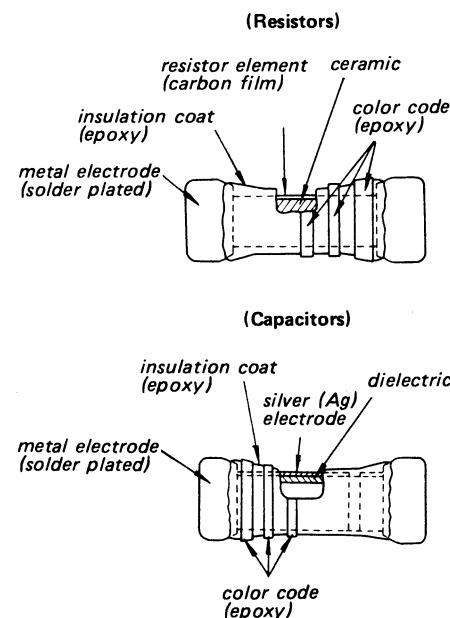
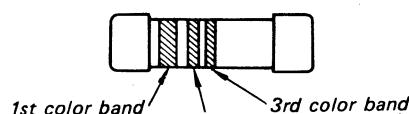
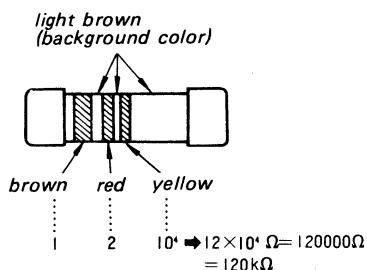


Fig. 1

2. Color Code Reading



(Example of Resistor)



(Example of Capacitor)

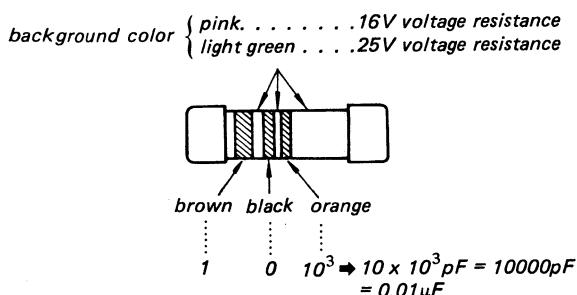


Fig. 2

3. How to Remove MELF Components and Mount Replacements

Use a soldering iron of at least 40W with an iron tip 4 mm in diameter and file the tip down to the angle shown in the diagram.

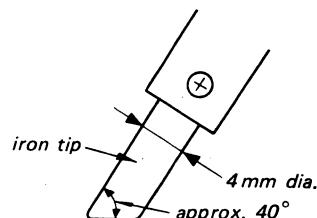


Fig. 3

1. Bring the flat surface of the soldering iron in equal contact with both soldered ends of the component.
2. The solder should melt in about 4 seconds. (The solder will melt more readily if a small amount of solder is attached to the iron tip and the iron tip is placed against the component.)
3. Once the solder has melted, tap the component aside with the tip of the soldering iron, and remove it from the board.

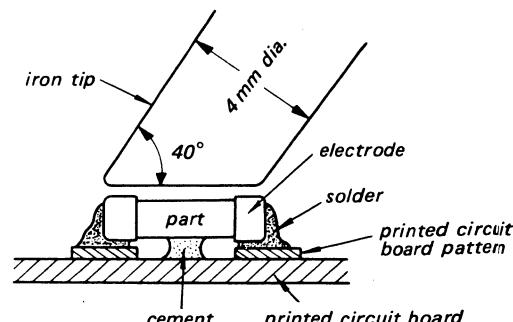


Fig. 4

4. Use lead type resistors to replace the MELF components. This replacement may be mounted with short leads (see Fig. 5).

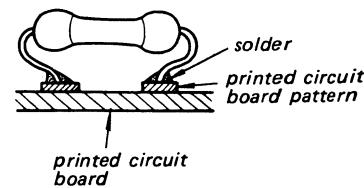


Fig. 5

*Note: Use 3216 type chip components to replace the MELF capacitor components.
See page 4 for mounting of chip components.*

Replacing chip components

All chip components should be connected and disconnected, using a tapered soldering iron [temperature of the iron tip: less than 280°C (536°F)], a pair of tweezers and braided wire.

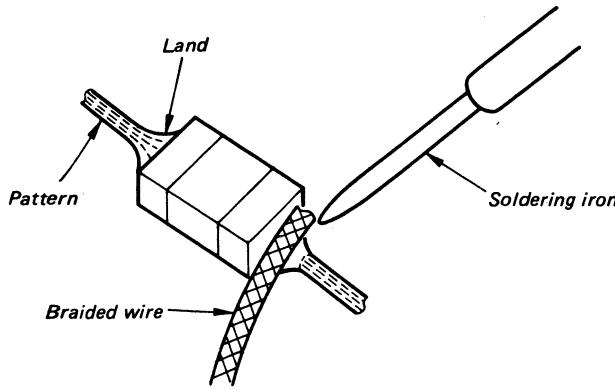
Precautions for replacement

1. Do not disconnect the chip component forcefully. Otherwise, the pattern may peel off.
2. Never re-use a disconnected chip component. Dispose of all old chip components.
3. To protect the chip component, heating time for attaching the component should be within 3 seconds.

○ Removing chip components

(1) Removing solder at electrode

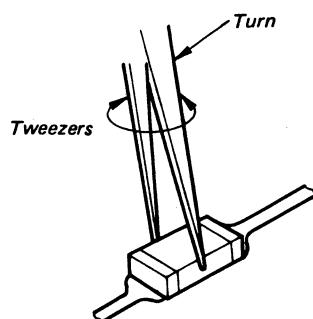
Remove the solder at the electrode, using a thin braided wire. Do not remove the solder of the part (chip component) attached adjacent to the electrode.



(2) Disconnecting chip components

Turn the tweezers with the soldering iron alternately applied to both electrodes, and the chip component will be disconnected. Take careful precautions while disconnecting, because if the chip component is forcefully removed the land may peel off.

Never re-use a disconnected chip component.



(3) Smoothing the soldered surface

After disconnecting the chip component, remove the solder by using a braided wire to smooth the land surface.

○ Connecting chip components

The value of chip components is not displayed on the main body. Take due precautions to avoid mixing new chip components with other ones.

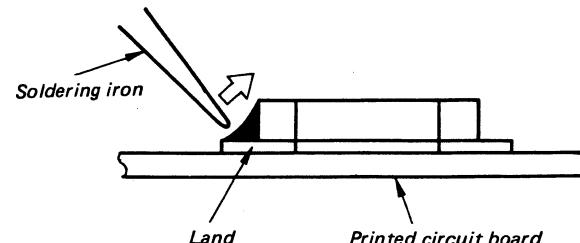
(1) Applying solder to land on one side

Apply a thin layer of solder to the land on one side where the chip component is to be connected. Too much solder may cause bridging.



(2) Speedy soldering

Hold the chip component at the desired position, using tweezers, and apply the soldering iron in the arrow-marked direction. To protect the chip component, heating time should be within 3 seconds.



(3) Speedy soldering of electrode on the other side

Solder the electrode on the other side in the same way as in (2) above.

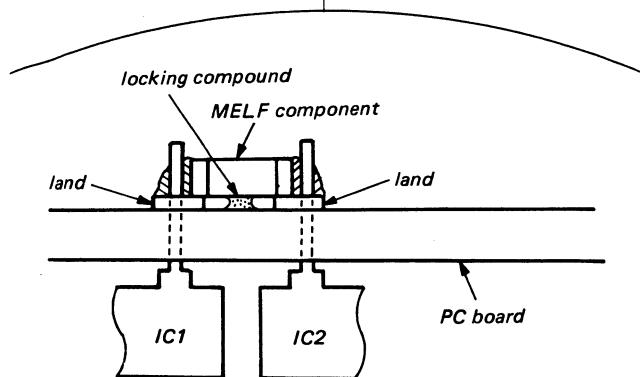
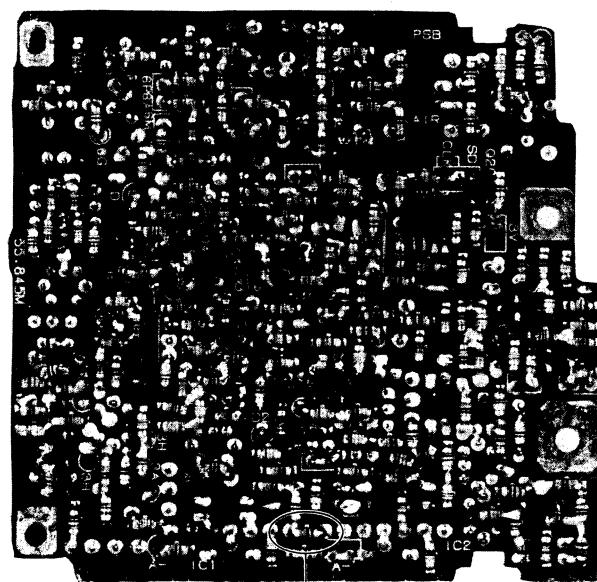
—SERVICING NOTE—

Note on Parts Replacement

This set uses MELF components. To increase the mounting density of components on PC board, the land where MELF component is to be connected is common to the land where ordinary component is to be connected.

Accordingly, when removing the ordinary components, the MELF component will be also removed. Be sure to solder MELF components when replacing the parts.

Note: The MELF components are secured with locking compound.

**Note on Variable Capacitance Diodes Replacement in Antenna Tank Circuit and First Local Oscillator VCO Circuit**

Variable capacitance diodes in antenna tank circuit and first local oscillator VCO circuit have the same voltage-capacitance characteristic.

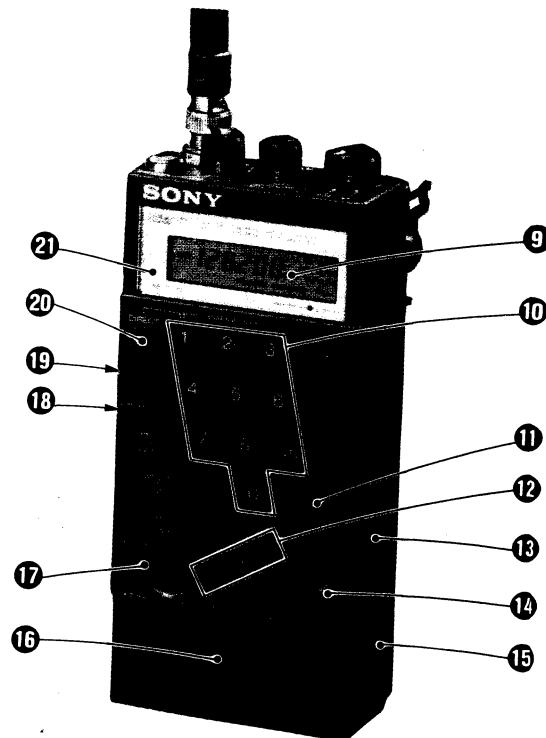
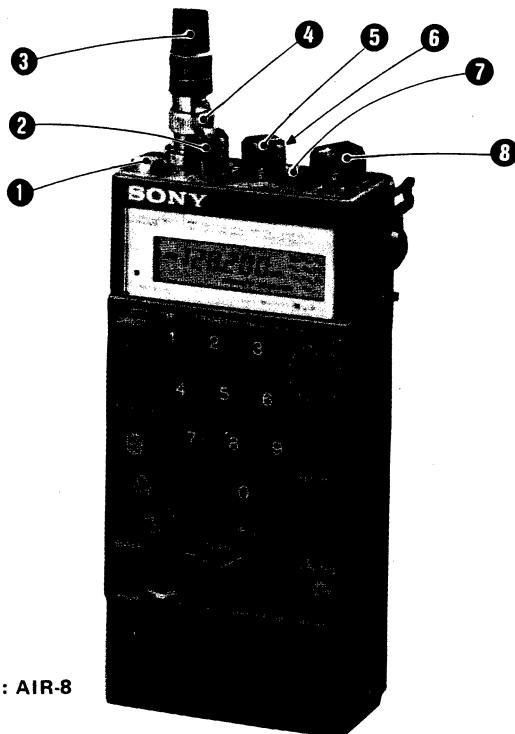
- FM/AM/PSB band
D6, 7, 14, 15, 16, 17, 205, 206, 207: 1T33 (to be same characteristic)
- AIR band
D8, 9, 203, 204: 1T32 (to be same characteristic)

When replacing these variable capacitance diodes, same characteristic diodes should be used.
(If not, tracking error or sensitivity change will be occurred.)

— Replacement parts —

- For FM/AM/PSB band One set (9 diodes)
Part No. 8-713-309-00
- For AIR band One set (4 diodes)
Part No. 8-713-240-00

LOCATION AND FUNCTION OF CONTROLS



① POWER switch

Depress to turn on the receiver (■ ON).
To turn the receiver off, press it again (■ OFF).

② VOL (volume) control

Turn clockwise for more volume. It can be depressed (■) to allow the SQL (squench) control to be adjusted more easily.

③ Helical antenna (supplied)

Used for AIR band, PSB and FM reception.

④ ANT (antenna) connector

Connect the supplied helical antenna or the BNC connector of an optional external antenna for AIR band, PSB and FM reception.

⑤ SQL (squench) control

Used for cutting background noise while tuning and during intervals between communications. Normally, depress the control (■ AUTO). Press it again to set to ■ MANUAL, and adjust the squelch level manually.

When performing auto tuning or memory scan tuning or program scan tuning, set the SQL control at the position where the RECEIVE indicator goes out.

⑥ ⑧ (earphone) jack

Connect the supplied earphone for private listening.
This jack is also used for connecting an external speaker or recording broadcast on a tape recorder.

⑦ AM EXT (external) ANTENNA jack

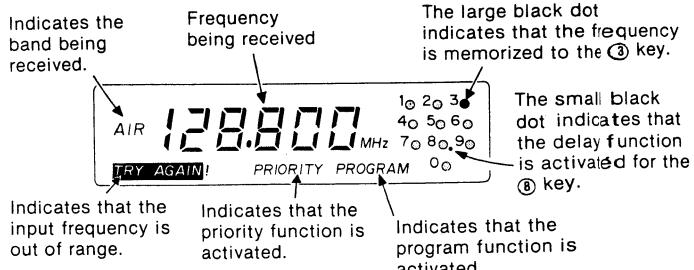
Connect an optional external antenna for AM reception.

⑧ Band selector

Select the desired band: PSB, AIR, FM or AM

⑨ Display (LCD)

Displayed as follows:



⑩ Counter keys

Used to input a frequency for direct tuning, to memorize a station and to receive a memorized station.

⑪ EXECUTE key

Used for direct tuning.
After pressing the DIRECT key and inputting the desired frequency with the counter keys, press this key to tune in the frequency.

⑫ SCAN keys

Used for scan tuning and manual tuning.
When you press the + (plus) or - (minus) key, the frequency is increased or decreased by the intervals shown on page 9.
If you keep the key pressed, the frequency changes continuously.

⑬ LIGHT switch

The display is illuminated when this switch is pressed.

KEYS FOR AIR BAND AND PSB RECEPTION
(indicated in green)

⑯ KEY PROTECT key

When this key is pressed once, the keys on the front face are locked and no longer function.
To release this key, press it again.

⑯ DC IN 6 V (external power input) jack

For operation from an external power source.

⑯ Speaker

⑯ ENTER key

Used to memorize a frequency.
After inputting the desired frequency, while pressing this key, press the counter keys at which the frequency is to be memorized.

⑯ Battery compartment (rear)

⑯ 9 kHz/10 kHz selector (inside battery compartment)

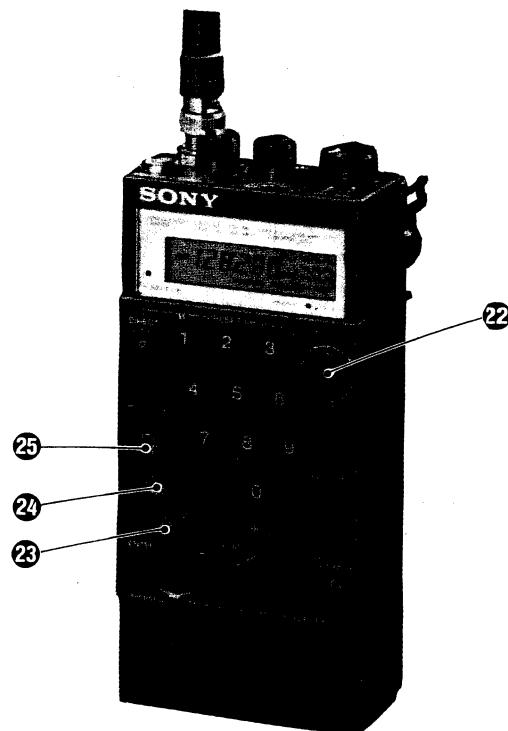
Used to change the MW tuning interval.

⑯ DIRECT key

Used for direct tuning.

⑯ RECEIVE indicator (LED)

When a signal or a noise is received, this indicator lights in red.



⑯ MEMORY SCAN key

Used for memory scan tuning.

⑯ PROGRAM key

Used to initiate the program function. See page 13.

⑯ DELAY key

Used to initiate the delay function. See page 14.

⑯ PRIORITY key

Used to initiate the priority function. See page 14.

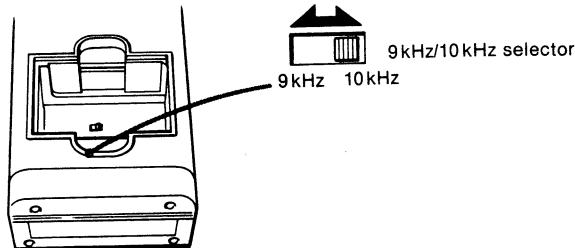
POWER SOURCES

The internal batteries are also used to back up the built-in microcomputer. Be sure to keep the batteries installed even when the receiver is operated on other power sources.

HOW TO CHANGE THE MW TUNING INTERVAL

The MW tuning interval is factory preset to 10kHz or 9kHz to match the local frequency allocation system. If you use the receiver in an area where the frequency allocation system is based on the other interval, change the position of the 9 kHz/10 kHz selector in the battery compartment as follows.

rear



- 1 Remove the batteries.
- 2 Switch the selector.
- 3 Wait at least 10 minutes, then put back the batteries in the compartment and close the lid.

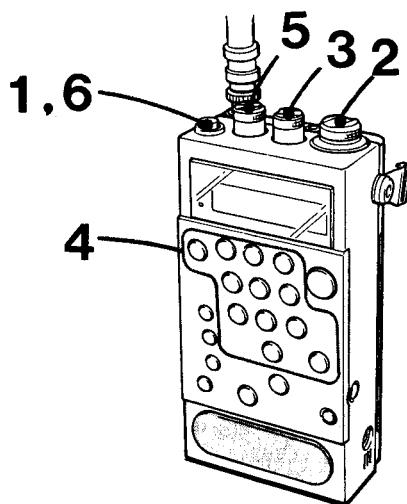
Notes

- If you replace the batteries within approx. 10 minutes after the batteries are removed, the tuning interval will not be changed although the selector has been switched. Be sure to wait for at least 10 minutes.
- After changing the MW tuning interval, memorize the stations and functions again, as the previous memory may have been erased.

FM/AM/AIR/PSB reception

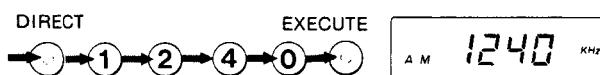
If you know the frequency of a station to be received, you can tune in the station easily by direct tuning.

The numbers in the illustration refer to the sequence of operation.



- 1 Depress the POWER switch (■ ON).
- 2 Set the band selector to the desired band.
- 3 Set the SQL control to MIN with ■ MANUAL set.
- 4 Press the DIRECT key, input the frequency of the station to be received using the counter keys, then press the EXECUTE key. The station will be tuned in.

Example: AM 1240 kHz



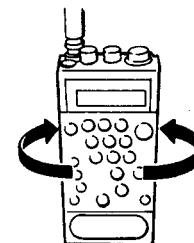
AM 2000 kHz



FM 90.10 MHz



For AM reception, the built-in ferrite bar antenna functions. Since this antenna is directional, rotate the set horizontally for optimum reception, if necessary.



Note: After pressing the DIRECT key or a counter key, press the next key within 5 seconds. If you do not, the previous station will return.

The frequency received by this receiver is displayed in steps of the following intervals, depending on the bands.

AIR: 0.025 MHz
PSB: 0.005 MHz
FM: 0.050 MHz
LW: 1 kHz
MW: 9kHz or 10kHz *
SW: 1 kHz

This is because the frequencies are allocated at these intervals. Therefore, if you input a frequency between the interval, the frequency at the interval just below will be tuned in and displayed. For example, if you input AM 1242 kHz with the tuning interval set to 10 kHz, AM 1240 kHz will be tuned in and displayed.

* This tuning interval can be also set to 10kHz or 9kHz by switching the 9kHz/10kHz selector in the battery compartment. See page 8.

If you input a wrong frequency

Press the DIRECT key again and input the correct frequency.

The TRY AGAIN! indication

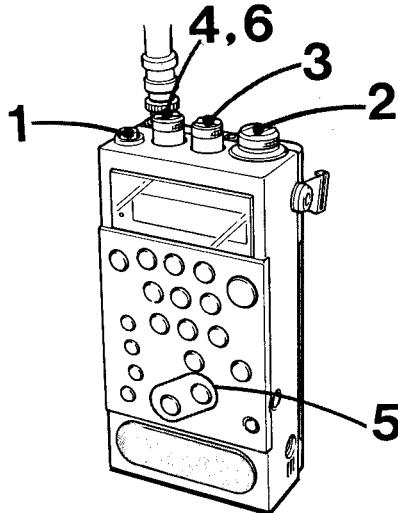
If you input a frequency outside the frequency range (AIR 108–136 MHz, PSB 144–174 MHz, FM 76.0–108.0 MHz, AM 150–2194 kHz), the indication [TRY AGAIN]! will blink in the display. When you input a proper frequency, [TRY AGAIN]! indication will disappear. If you leave [TRY AGAIN]! indication blinking, it will disappear after about 5 seconds, and the tuned station's frequency will reappear.

FM/AM/AIR/PSB reception

SCAN TUNING

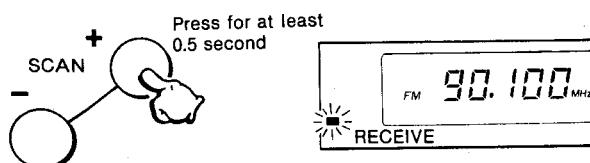
Use scan tuning to automatically scan the stations in the frequency range of the band being received. Scanning stops automatically at each station.

The numbers in the illustration refer to the sequence of operations.



- 1 Depress the POWER switch (■ ON).
- 2 Set the band selector to the desired band.
- 3 Depress the SQL control (■ AUTO).
- 4 Turn the VOL control slightly clockwise.
- 5 Press the SCAN + or - key for at least 0.5 second to start scanning, then release the key. The display changes continuously and stops automatically when a station is received.

Pressing the + key, the tuned frequency is increased.
Pressing the - key, the frequency is decreased.



Repeat step 5 until the desired station is received.

- 6 Adjust the volume with the VOL control.

- For AM reception, if necessary rotate the set horizontally for optimum reception.
- To stop scanning, press the + or - key momentarily.

After listening, set the POWER switch to ■ OFF.

If stations cannot be tuned in by scan tuning with the SQL control set to ■ AUTO, press the SQL control again (■ MANUAL) and turn the control slowly counterclockwise (towards MIN). Be careful not to turn this control too far counterclockwise.

If scanning stops a little before a station, tune in the frequency more precisely by manual tuning (See page 11.).

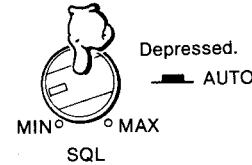
Note on scanning

Scanning is performed in the range of the band being received, at the intervals shown on page 9. When the upper limit of the frequency of that band is reached, the dial is scanned back to the lower limit, and vice versa.

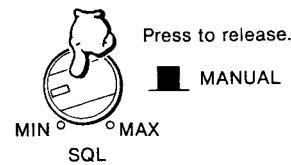
HOW TO USE THE SQL CONTROL

Normally, depress the SQL control (■ AUTO).

Signals and noise below the factory-set level will be suppressed.



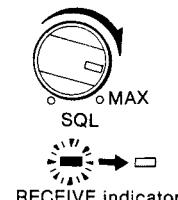
Press this control again to release it (■ MANUAL), and adjust the squelch level.



Turn the control counterclockwise (towards MIN) to receive weaker signals.

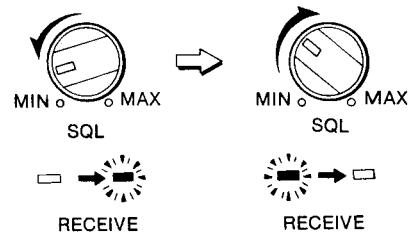


- If you attempt to perform scan tuning or memory scan tuning and scanning does not begin when the SQL control is in the ■ AUTO position, set the control to ■ MANUAL and turn the control slowly clockwise (towards MAX). At the level at which the RECEIVE indicator goes out, scanning will begin. Be careful not to turn the control too far clockwise or weak signals will not be received.



RECEIVE indicator

- If scanning does not stop when the SQL control is in the ■ AUTO position, turn the control slowly counterclockwise (towards MIN). When the RECEIVE indicator lights up, turn the control clockwise again until the indicator goes out.

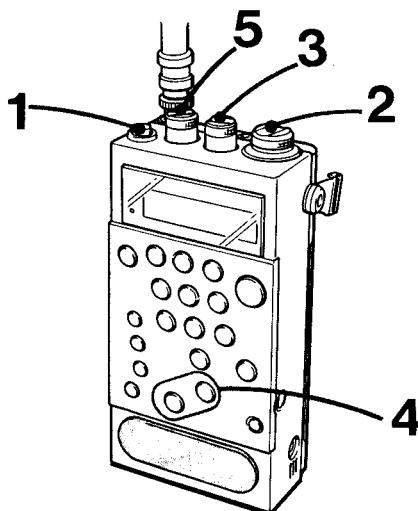


FM/AM/AIR/PSB reception

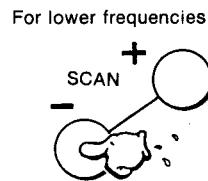
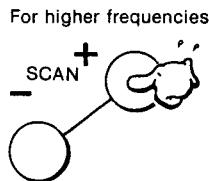
MANUAL TUNING

Use manual tuning when you do not know the frequency of the station you want to tune in, or when you want to tune in a station more precisely after scan tuning.

The numbers in the illustration refer to the sequence of operations.



- 1 Depress the POWER switch (■ ON).
- 2 Set the band selector to the desired band.
- 3 Set the SQL control to MIN.
- 4 ① Keep the SCAN + or - key pressed until the desired station is received.



- 2 Press the SCAN key momentarily to tune the station precisely. Each time the key is pressed, the frequency is increased or decreased by the intervals shown on page 9.

- 5 Adjust the volume with the VOL control.

After listening, set the POWER switch to ■ OFF.

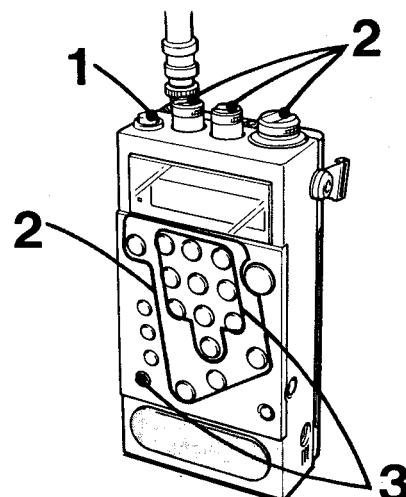
FM/AM/AIR/PSB reception

MEMORY TUNING

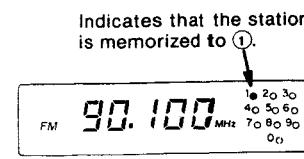
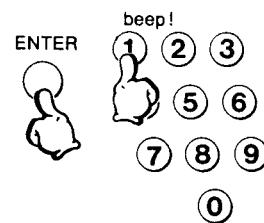
Once the frequencies of the stations you want to tune in are memorized, all you have to do is to push a key. One FM, one AM, one AIR and one PSB station can be memorized to a key, or a total of 40 stations (Canadian, AEP-2 models of AIR-7 and AIR-8) or 30 stations (AEP-1, E models of AIR-7) to all the counter keys.

HOW TO MEMORIZE A STATION

The numbers in the illustration refer to the sequence of operations.



- 1 Depress the POWER switch (■ ON).
- 2 Tune in the desired station using any tuning method—direct tuning (page 9), scan tuning (page 10) or manual tuning (page 11).
- 3 While pressing the ENTER key, press one of the counter keys. A beep sounds and the corresponding dot appears.

**Notes**

- The frequencies memorized to all the counter keys at the factory are as follows:

AIR: 108 MHz

PSB: 144 MHz

FM: 76 MHz

AM: 531 kHz (530kHz in Canadian model of AIR-7 and AIR-8)

- If you memorize another station of the same band to a key on which you have already memorized a station, the previous station will be erased.

You cannot erase a station without memorizing another station.

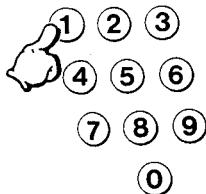
AIR/PSB reception

To check your memory

After memorizing the stations, press each counter key in turn to check that the desired stations have been memorized correctly. You can recall a station any time by pressing its counter key.

HOW TO RECEIVE A MEMORIZED STATION

Turn the power on, select the band and press the appropriate counter key. The memorized station will be received.



FM 90.100
MHz 10 20 30
40 50 60
70 80 90
00

Note: If no batteries are installed for more than 3 minutes, all memorized stations will be erased.

AIR/PSB reception

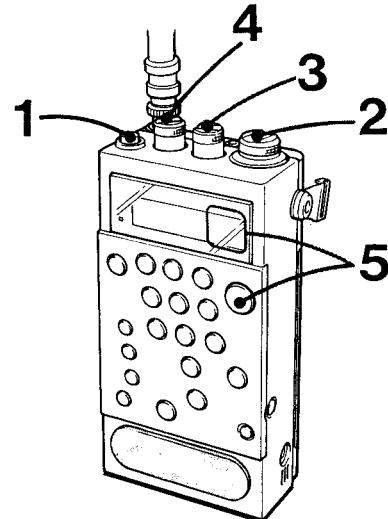
You can monitor aviation communications between aircraft and airport towers, such as a pilot's request for instructions, report of his position, and filling of his flight plans.

For type 1 and 2 models, you can monitor police, fire, forestry conservation, VHF weather, traffic and other public safety radio services, as well as the air band.

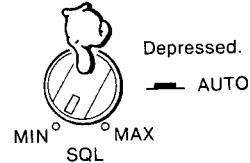
Direct tuning, scan tuning, manual tuning and memory tuning

Tuning procedure is the same as for FM or AM reception. See pages 9 to 12.

If necessary, set the SQL control to **■ MANUAL** and adjust it. (See page 10.)

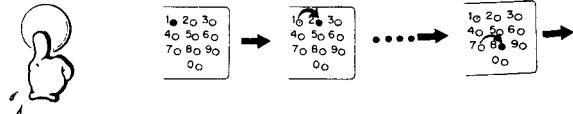


- 1 Depress the POWER switch (■ ON).
- 2 Set the band selector to AIR or PSB.
- 3 Depress the SQL control (■ AUTO*).



- 4 Adjust the volume with the VOL control.
- 5 Keep the MEMORY SCAN key pressed for at least 0.5 second, then release it. The memorized stations will be tuned in continuously in the sequence 1→2→3→...→0→1→...*.

MEMORY SCAN



When there is a signal, scanning will stop. If the signal disappears, scanning begins again.

To stop scanning, press the MEMORY SCAN key again.

To start scanning again when memory scanning has automatically stopped, keep the MEMORY SCAN key pressed for at least 0.5 second and release it.

Each time you press the MEMORY SCAN key momentarily, a memorized station is tuned in.

Using the program function, you can change the sequence of memory scanning. (See page 13.)

* When noise is heard while tuning, set the SQL control to **■ MANUAL** and turn it slowly clockwise.

AIR/PSB reception

PROGRAM FUNCTION

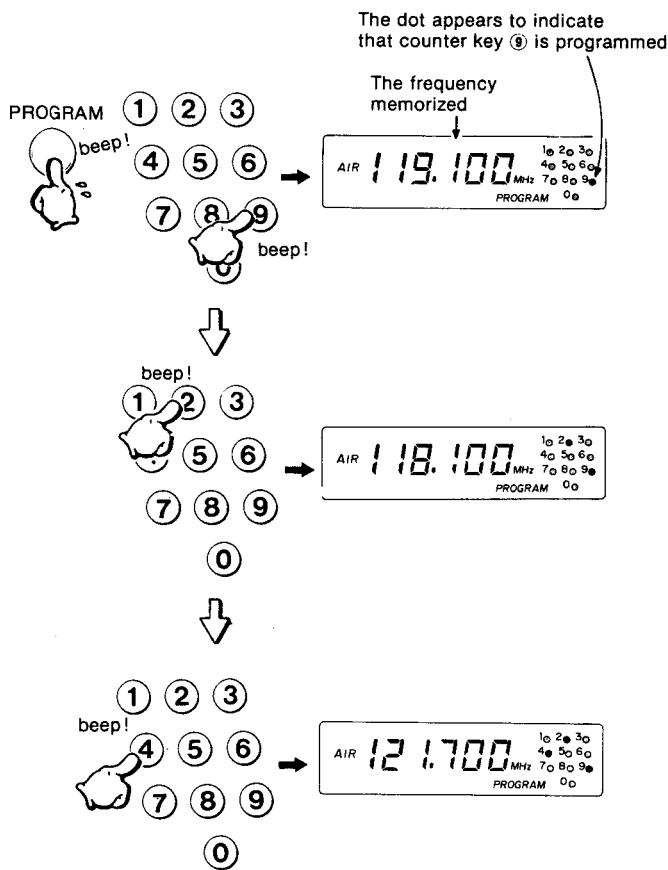
The program function is used to change the sequence of memory scanning or scan only certain keys.

How to activate the program function

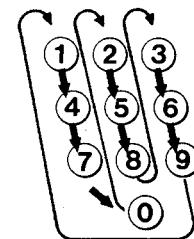
Memorize frequencies to all counter keys.

Follow the numbered sequence.

- 1 While pressing the PROGRAM key, press the counter keys in the desired sequence.



- The sequence of programmed scanning is factory set as follows.



- Since only 10 keys can be programmed, even if the eleventh key is pressed, it is not programmed.
- The program function can be activated and cancelled while another station is being received.

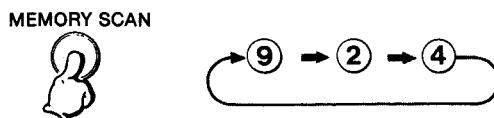
To cancel the program function

Press the PROGRAM key again. The PROGRAM indication in the display disappears. In this case, the sequence of memory scanning reverts to ①→②→③→④→⑤→⑥→⑦→⑧→⑨→⑩→①→...

- During programming, the previous station is received.
- You can program the counter keys in any desired sequence of up to 10 scanning points, including programming the same counter key more than once.

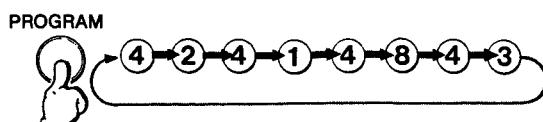
- 2 Press the MEMORY SCAN key to start memory scanning.

To scan stations ⑨, ② and ④



Example of programming

To tune in a certain station memorized to the ④ key



AIR/PSB reception

PRIORITY FUNCTION

If you are particularly interested in listening to a certain station, designate it as the priority station.

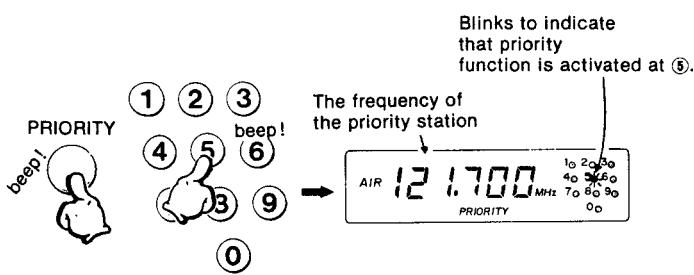
The set automatically tunes to the station every 3 seconds to check whether there is a signal or not, even while another station is being received.

To designate the priority station

Memorize frequencies to all counter keys.

While pressing the PRIORITY key, press the counter key to which the desired frequency is memorized.

If more than two counter keys are pressed, the last key pressed designates the priority station.



- The PRIORITY indication appears in the display.
- A beep sounds and the corresponding dot blinks.
- When the priority station is tuned in every 3 seconds, the station being received will be interrupted for a fraction of a second.

To cancel the priority station

Press the PRIORITY key again. The PRIORITY indication and the dot in the display disappear.

- The priority function can be activated and cancelled while another station is being received.

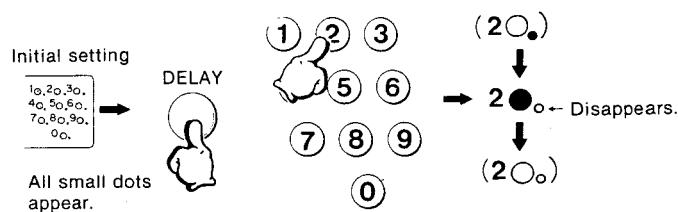
AIR/PSB reception

DELAY FUNCTION

Using the delay function, the station being received will be kept tuned in during memory scanning after the signal stops for approx. 2 seconds, i.e. during the interval between communications. The delay function is activated on all counter keys at the factory.

To cancel the delay function

While pressing the DELAY key, press the counter key on which the delay function is to be cancelled.



The corresponding small dot in the display disappears.

To activate the delay function again

While pressing the DELAY key, press the counter key on which you want the delay function to activate. The small dot in the display appears.

- The delay function can be activated and cancelled while another station is being received.
- Using the delay and priority functions simultaneously, you can receive a station continuously.

• IC301's (PLL CONTROL IC μ PD7503-136) TERMINAL FUNCTIONS

Terminal No.	Terminal Name	Function	Terminal No.	Terminal Name	Function
1	NC		33	S21	
2	SW		34	S20	
3	MW	This terminal is not used on this set.	35	S19	
4	LW		36	S18	
5	LP	Signal input for PLL lock detector.	37	S17	
6	DAT	Dividing number (N) serial data output of PLL IC (IC201).	38	S16	
7	CLK/KS0	Signal output for synchronous clock pulse of above serial data or signal output for initial key source.	39	S15	
8	LAT	Signal output for above serial data latch.	40	S14	
9	MT	Signal output for sound muting. muted: L, otherwise: H	41	S13	
10	SD	Signal input for station detector. tuned: H, detuned: L	42	S12	
11	KS1		43	S11	Signal output for LCD segment.
12	KS2		44	S10	
13	KS3	Signal output for key matrix scanning.	45	S9	
14	KS4		46	S8	
15	KS5		47	S7	
16	K0		48	S6	
17	K1		49	S5	
18	K2	Signal input for key matrix scanning.	50	S4	
19	K3		51	S3	
20	X2	This terminal is not used on this set.	52	S2	
21	X1	Connected to the ground.	53	S1	
22	VSS	Ground terminal	54	S0	Input for PSB band switching. PSB mode: H, otherwise: L For 3 band model, fix to L.
23	VLC3		55	PSB	Reset terminal
24	VLC2		56	RESET	System clock pulse oscillation terminal. (Approx. 120kHz)
25	VLC1	Input for LCD power supply.	57	CK	Power supply terminal.
26	VDD		58	VDD	System clock pulse oscillation terminal. (Approx. 120kHz)
27	COM3		59	CK	Input for AIR band switching.
28	COM2	This terminal is not used on this set.	60	AIR	AIR mode: H, otherwise: L
29	COM1		61	FM	Input for FM band switching.
30	COM0	Common signal output for LCD.	62	AM	FM mode: H, otherwise: L
31	S23		63	PON	Input for AM band switching.
32	S22	This terminal is not used on this set.	64	BEEP	AM mode: H, otherwise: L Input for power supply switching. POWER ON: H, OFF: L Signal output for beep sound. (Approx. 2kHz)

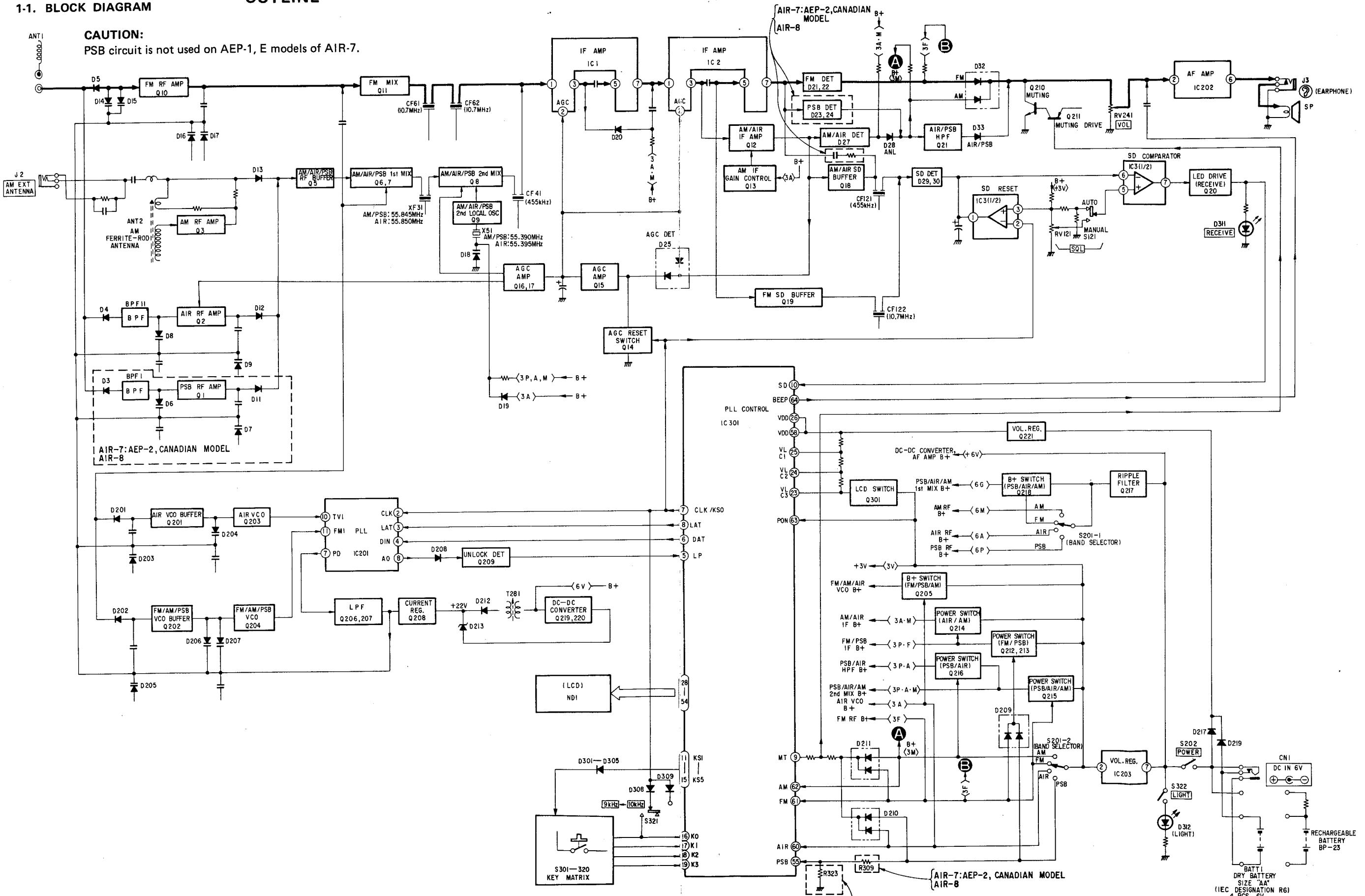
• KEY MATRIX TABLE

Output	Input	(19) K3	(18) K2	(17) K1	(16) K0	REMARKS
(7) KS0		—	—	—	MW CH STEP 9kHz↔10kHz	INITIAL KEY
(11) KS1	DELAY (SET/RESET)	PRIORITY (SET/RESET)	PROGRAM (SET/RESET)	ENTER		DOUBLE KEY
(12) KS2	DIRECT	MEMORY SCAN START/STOP	SCAN - (DOWN)	SCAN + (UP)		
(13) KS3	1	2	3	4		
(14) KS4	5	6	7	8		
(15) KS5	9	0	EXECUTE	KEY PROTECT		

SECTION 1
OUTLINE

1-1. BLOCK DIAGRAM

CAUTION:
PSB circuit is not used on AEP-1, E models of AIR-7.



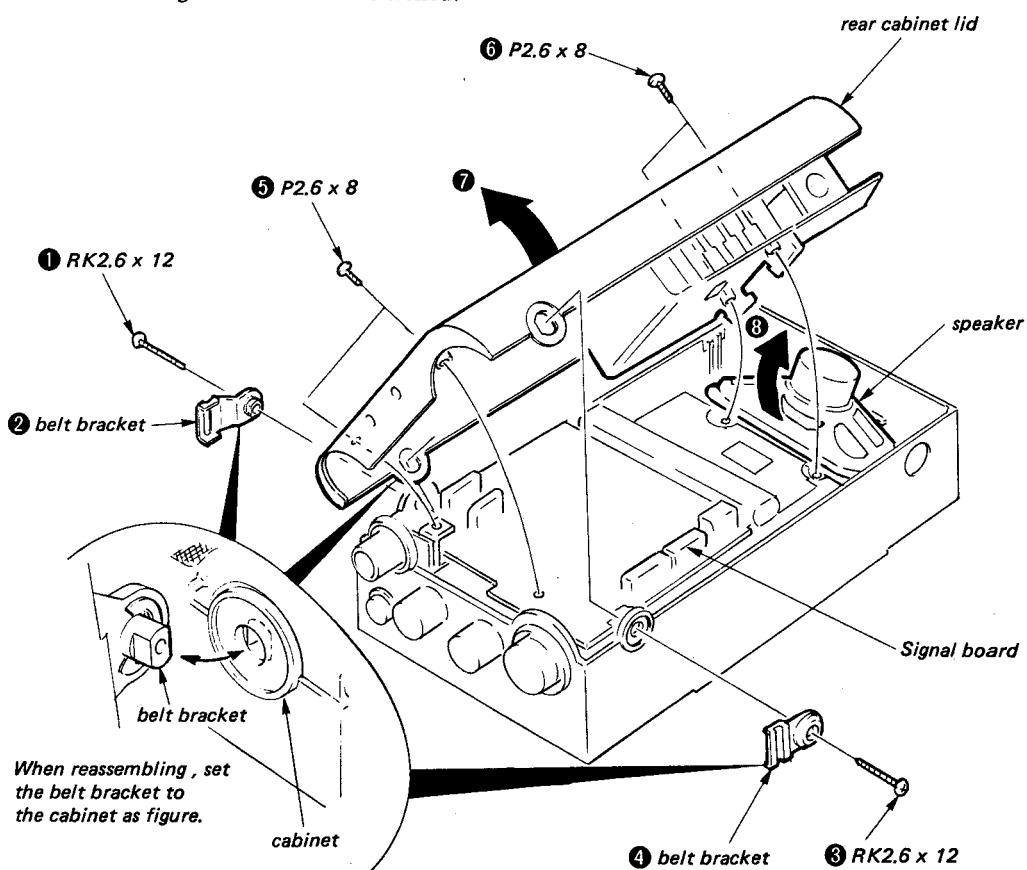
SECTION 2 DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

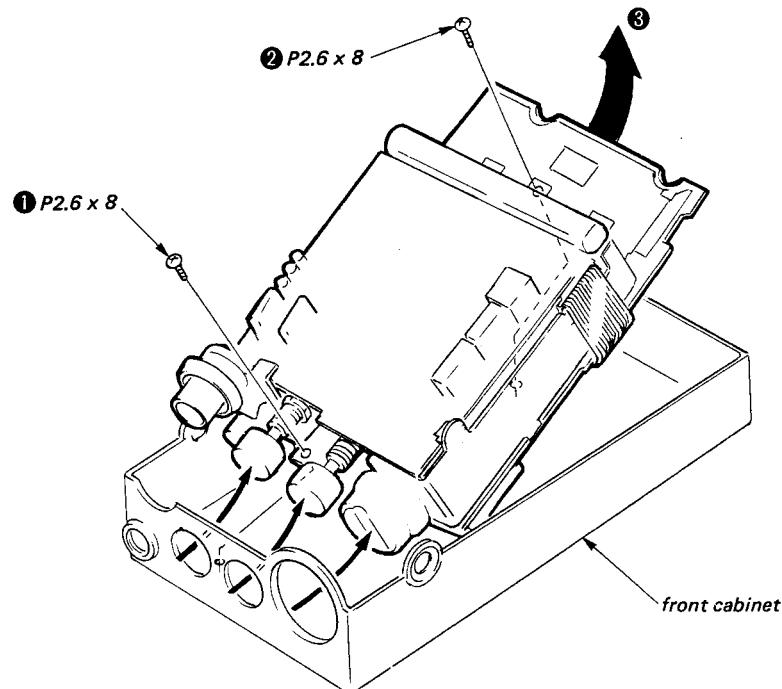
Remove the battery holder.

REAR CABINET LID, SPEAKER

Conductor side of signal board can be checked.

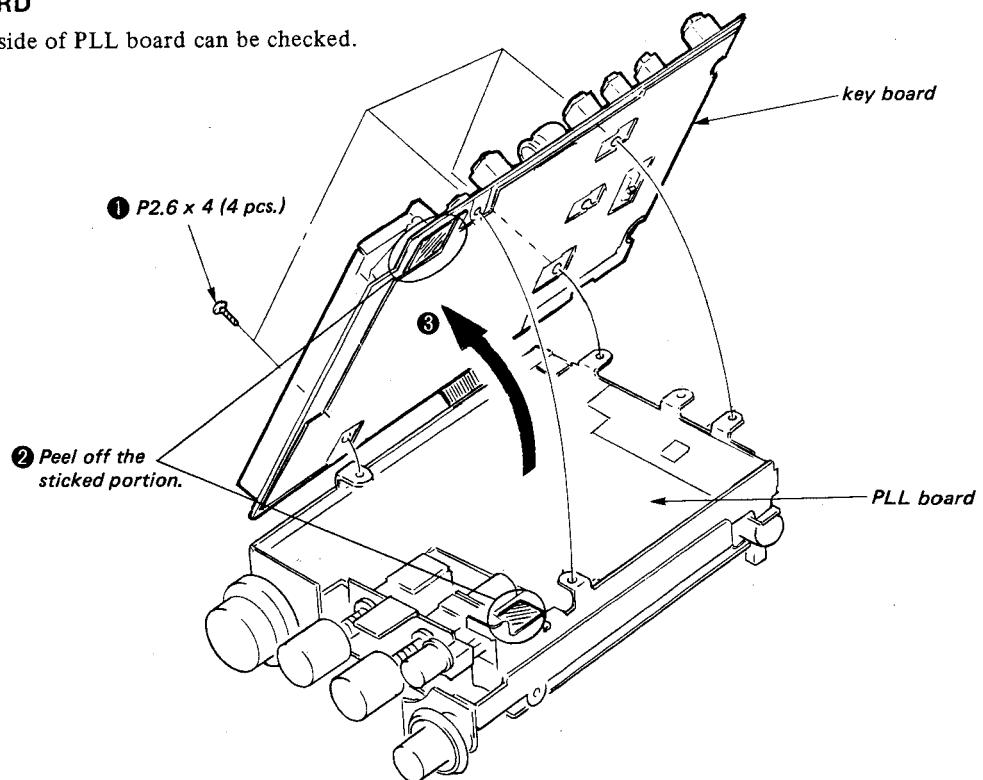


FRONT CABINET



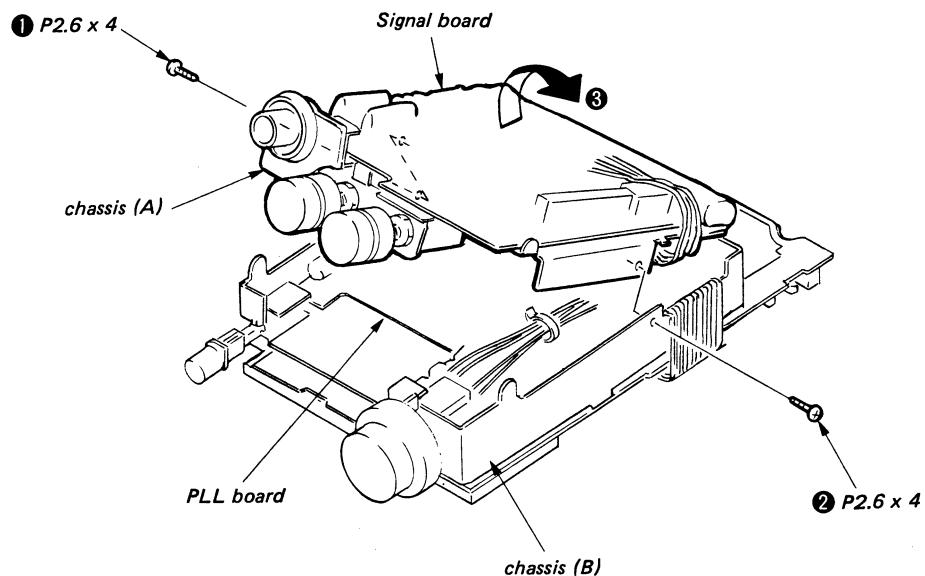
KEY BOARD

Conductor side of PLL board can be checked.



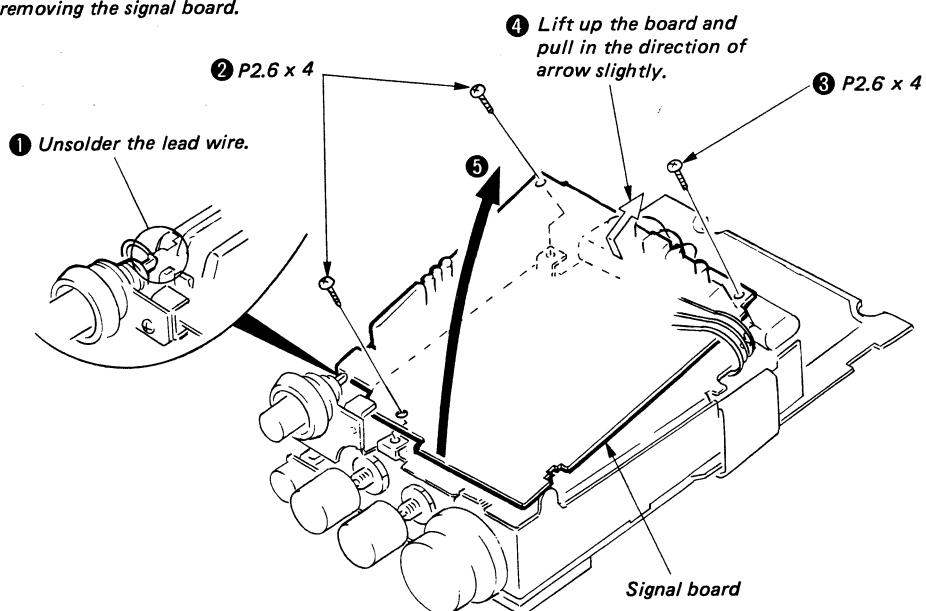
CHASSIS (A)

Conductor side of PLL board can be checked.

**SIGNAL BOARD**

Conductor side of signal board can be checked.

Note: Be careful not to break the lead wire when removing the signal board.



SECTION 3
ADJUSTMENTS

3-1. ELECTRICAL ADJUSTMENTS

Note On Adjustment

1. Adjustments should be made in the order given in this service manual.
2. Tracking adjustments should be made with signal board set to chassis A, and PLL board and key board set to chassis B. (If not, adjustment values will be out of the specifications after setting the board to the chassis.)
3. When FM section adjustments are made, connect 10pF capacitor to the following point and connect FM RF SSG input to the antenna input terminals. After adjustment, unsolder the 10pF capacitor and reconnect lead wire.

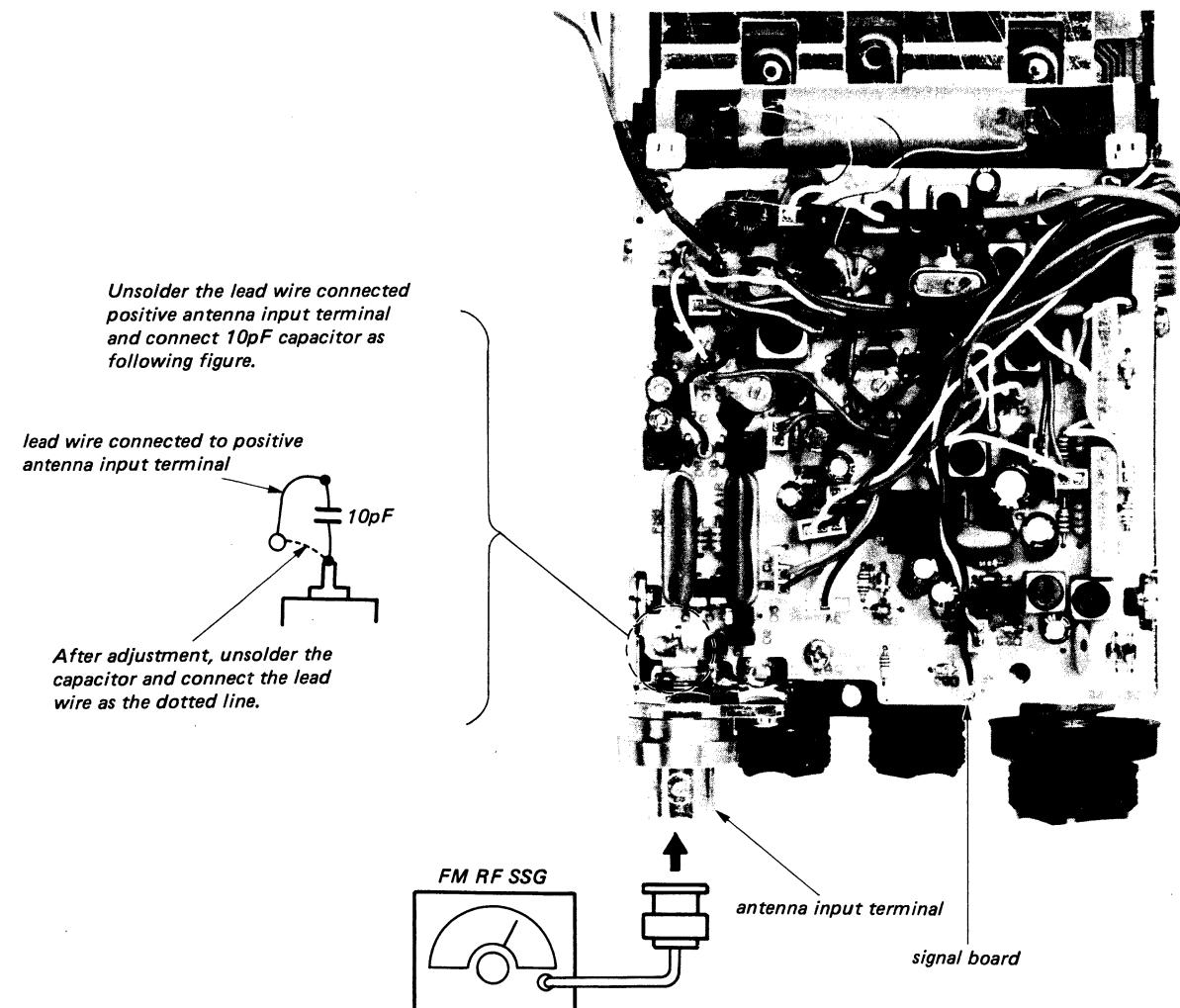


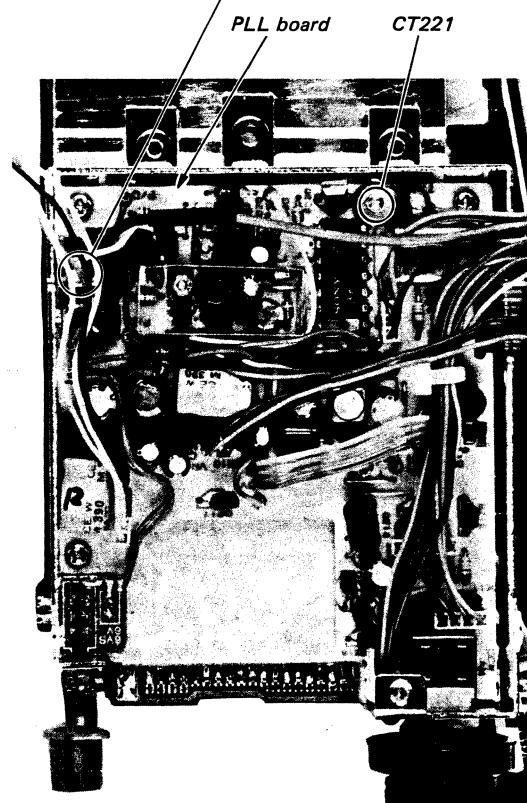
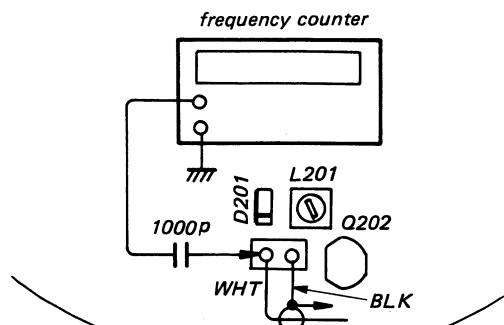
Fig. 6 Connecting point of 10pF capacitor for FM section adjustments

Reference Frequency Adjustment

Setting: Band selector: FM

Procedure:

1. Set the receiving frequency to 76MHz.
2. Adjust CT221 so that the frequency counter reads $86.7 \pm 0.0001\text{MHz}$.

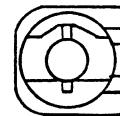


AIR VCO Adjustment

Setting: Band selector: AIR

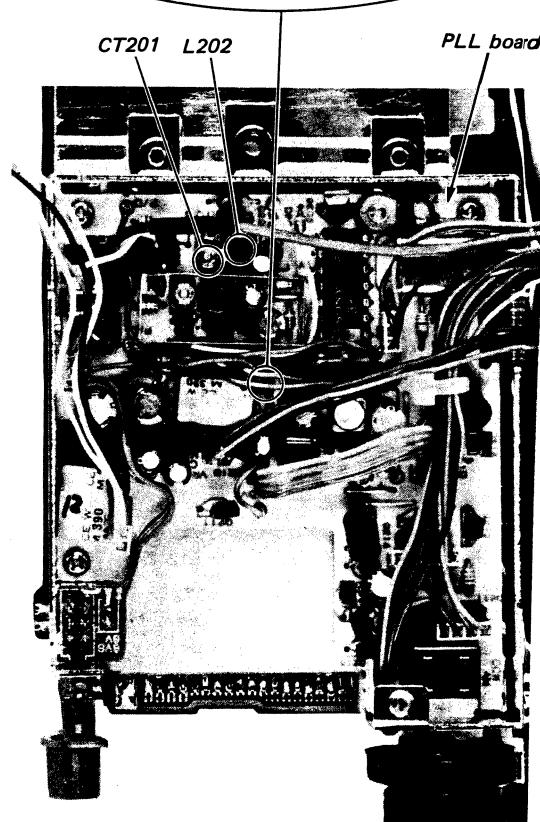
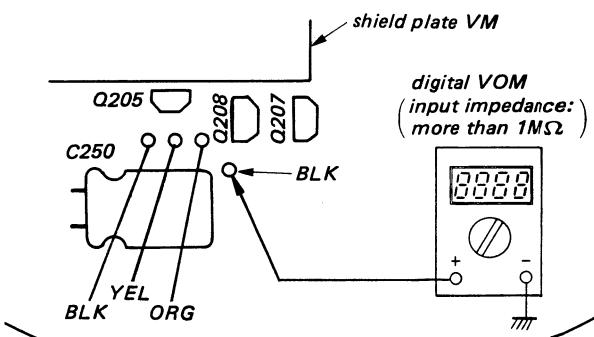
Procedure:

1. Set the receiving frequency to 108MHz.
2. Set CT201 to the mechanical center.



(MECHANICAL
CENTER
POSITION)

3. Adjust L202 so that the digital VOM reads 3.25V.

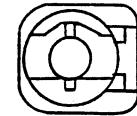


FM/PSB/AM VCO Adjustment

Setting: Band selector: AM

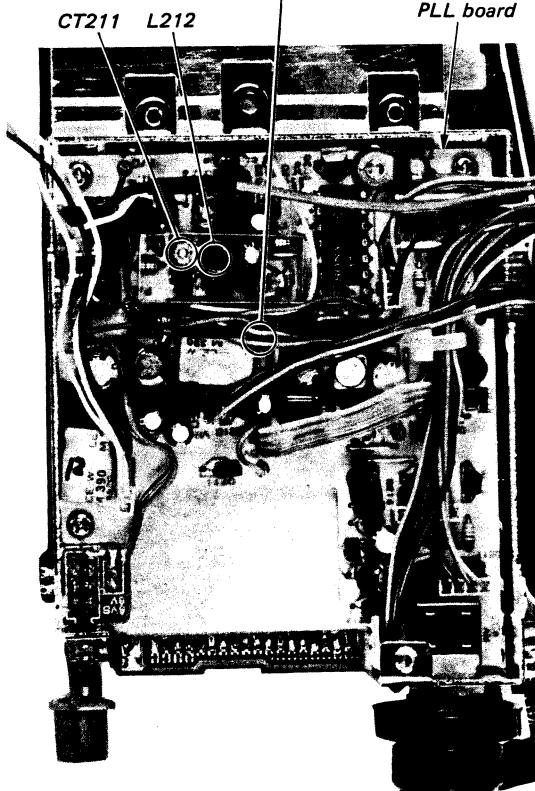
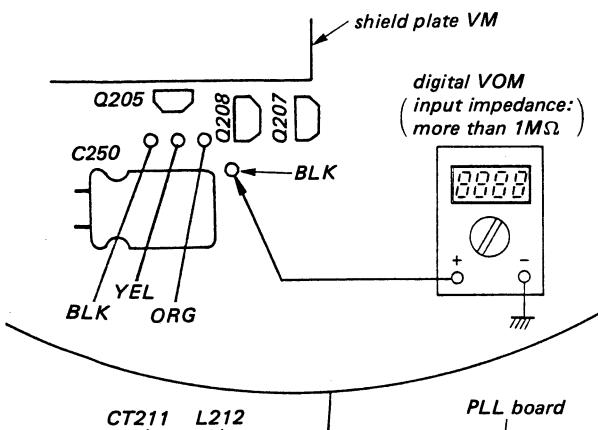
Procedure:

1. Set the receiving frequency to 150kHz.
2. Set CT211 to the mechanical center.



(MECHANICAL
CENTER
POSITION)

3. Adjust L212 so that the digital VOM reads 1.25V.

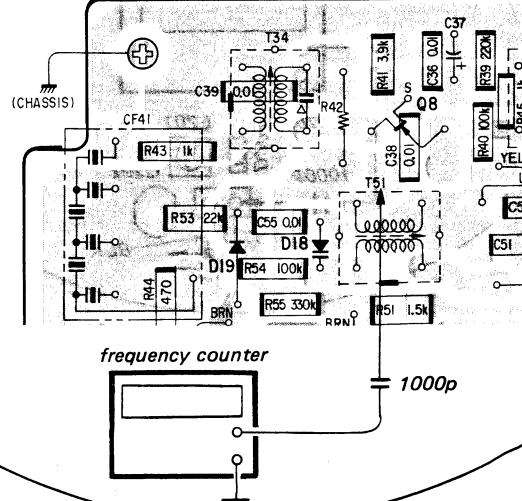


PSB/AIR/AM Second Local Oscillator VCXO Adjustment

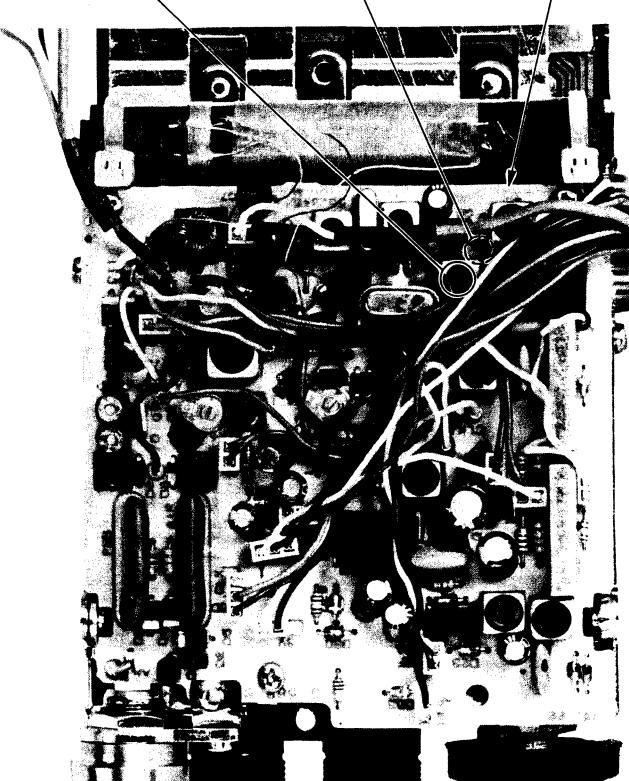
Procedure:

1. Band selector: AM
Receiving frequency is free.
2. Adjust T51 so that the frequency counter reads $55.390 \pm 0.0001\text{MHz}$.
3. Band selector: AIR
Receiving frequency is free.
4. Confirm that the frequency counter reads $55.395 \pm 0.001\text{MHz}$.

[SIGNAL BOARD] (CONDUCTOR SIDE)



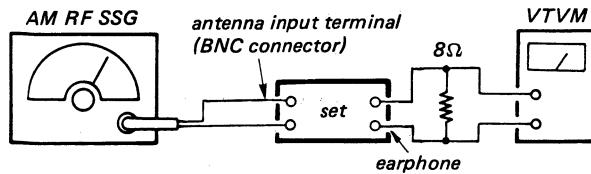
frequency counter



PSB/AIR/AM IF Adjustment

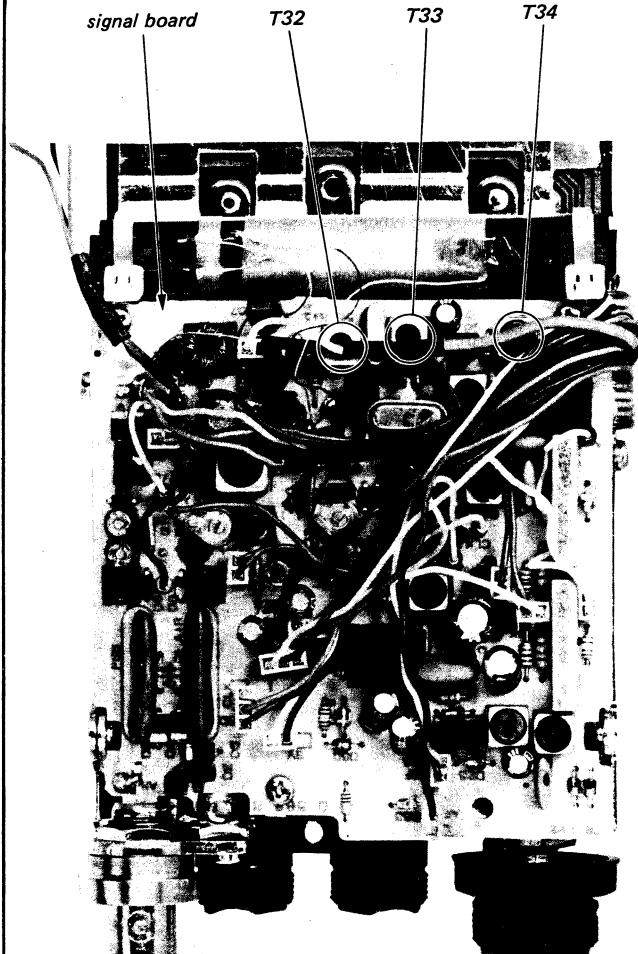
Setting: Band selector: AIR

Procedure:



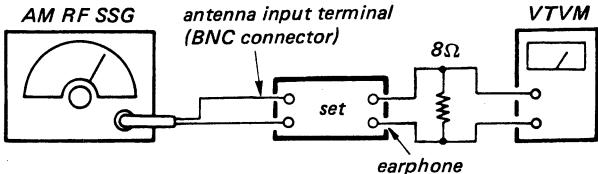
Carrier frequency: 122MHz
 Modulation: 30% amplitude modulation by 1kHz signal
 Output level: As low as possible around 0dB

1. Tune the set to 122MHz.
2. Adjust T32, T33, T34 for a maximum reading on VTVM.

**AIR/AM Detector Adjustment**

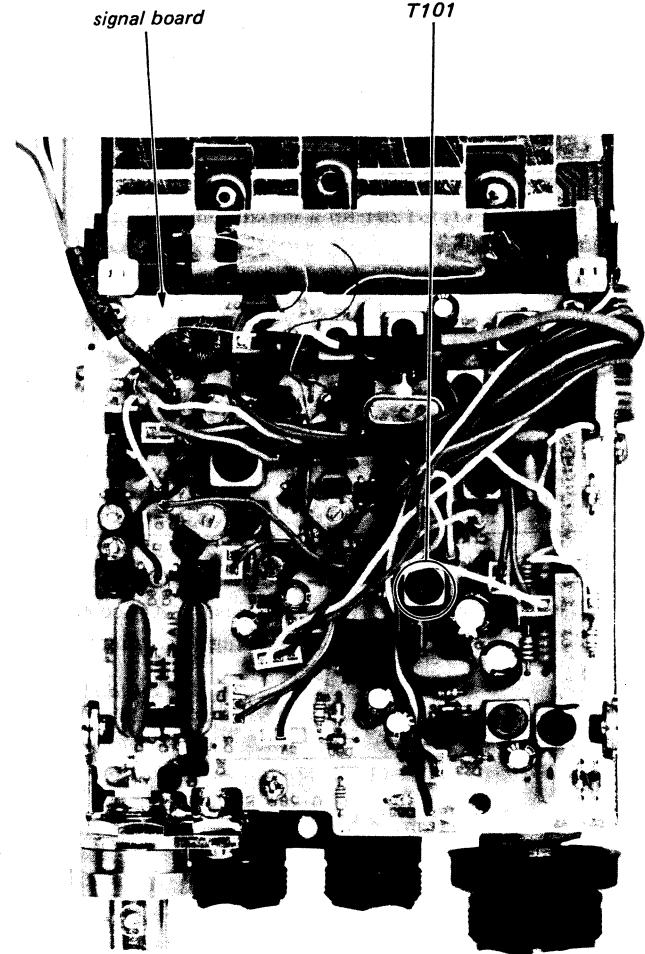
Setting: Band selector: AIR

Procedure:



Carrier frequency: 122MHz
 Modulation: 30% amplitude modulation by 1kHz signal
 Output level: As low as possible around 0dB

1. Tune the set to 122MHz.
2. Adjust T101 for a maximum reading on VTVM.



AIR Tracking Adjustment

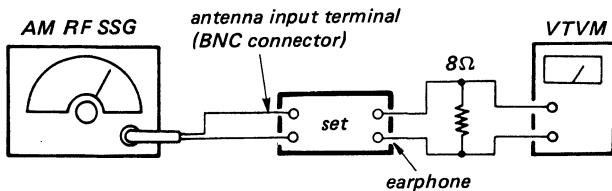
Setting:

1. This adjustment should be made after AIR VCO Adjustment (See page 23).
2. Band selector: AIR

PRECAUTION:

Adjustments should be made with signal board set to chassis A, and PLL board and key board set to chassis B.

Procedure:



Modulation: 30% amplitude modulation by 1kHz signal

Output level: As low as possible around 0dB

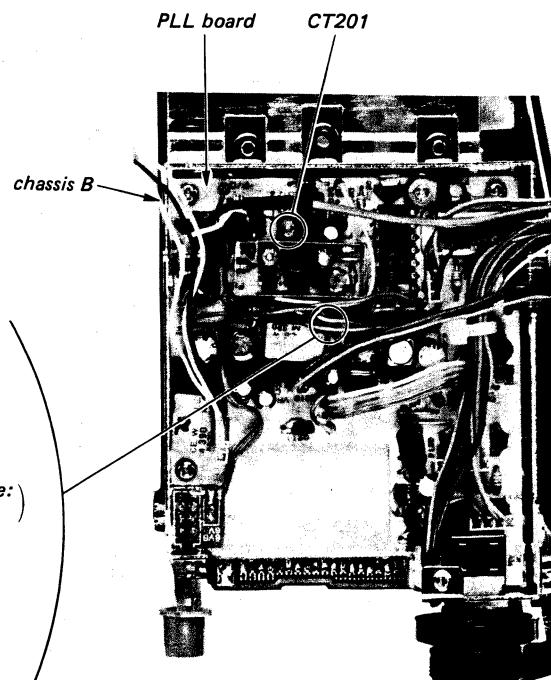
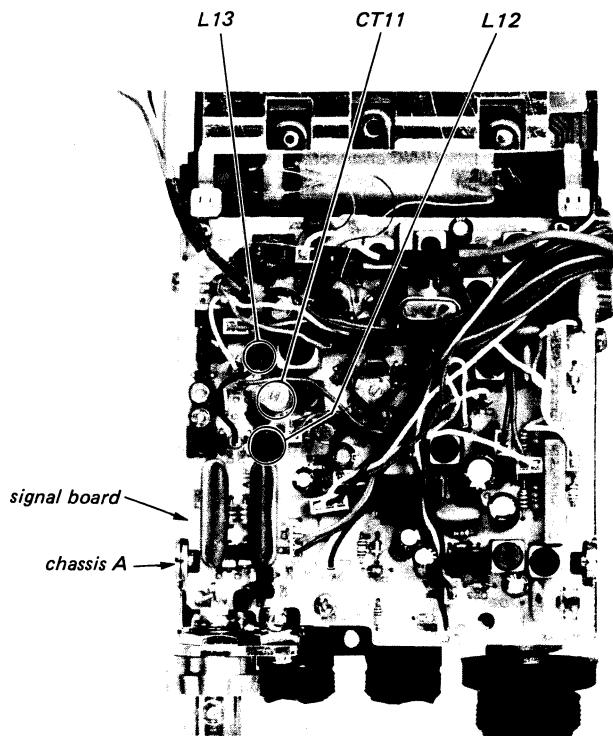
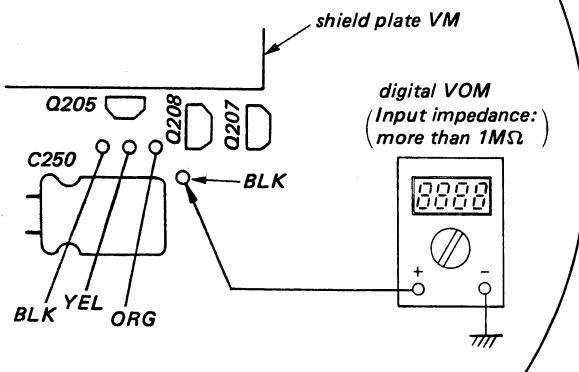
1. Carrier frequency of AM RF SSG: 109MHz
2. Tune the set to 109MHz.
3. Adjust L12, L13 for a maximum reading on VTVM.
4. Carrier frequency of AM RF SSG: 136MHz
5. Tune the set to 136MHz.
6. Adjust CT11, CT201 for a maximum reading on VTVM.
7. Repeat steps 1 – 6 two or three times.

Note: The adjustment should be finally done at step 6.

8. After adjustment, make sure that AIR VCO dc voltage is as follows at the receiving frequency of 108MHz and 136MHz.

receiving frequency	AIR VCO dc voltage
108MHz	$3.25 \pm 0.5V$
136MHz	$13.4 \pm 2V$

If necessary, make AIR VCO adjustment (See page 23). After that, make AIR tracking adjustment again.

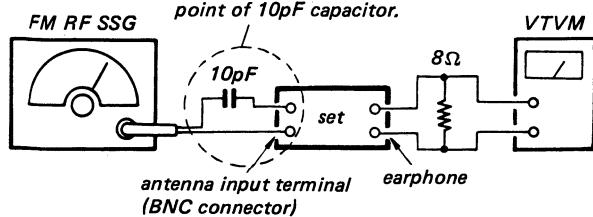


FM IF Adjustment

Setting: Band selector: FM

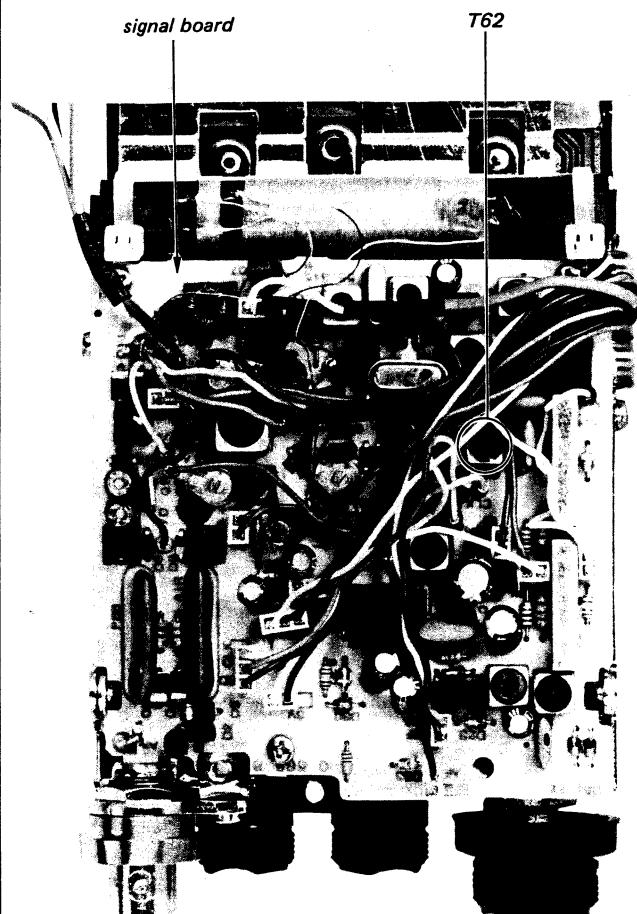
Procedure:

Note:
See page 22 for connecting point of 10pF capacitor.



Carrier frequency: 93MHz
Modulation: $\pm 22.5\text{kHz}$ frequency deviation by 400Hz signal (30%)
Output level: As low as possible around 10dB

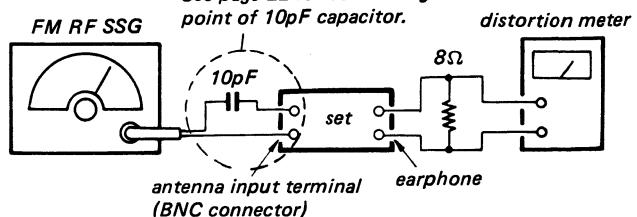
1. Tune the set to 93MHz.
2. Adjust T62 for a maximum reading on VTVM.

**FM Discriminator Adjustment**

Setting: Band selector: FM

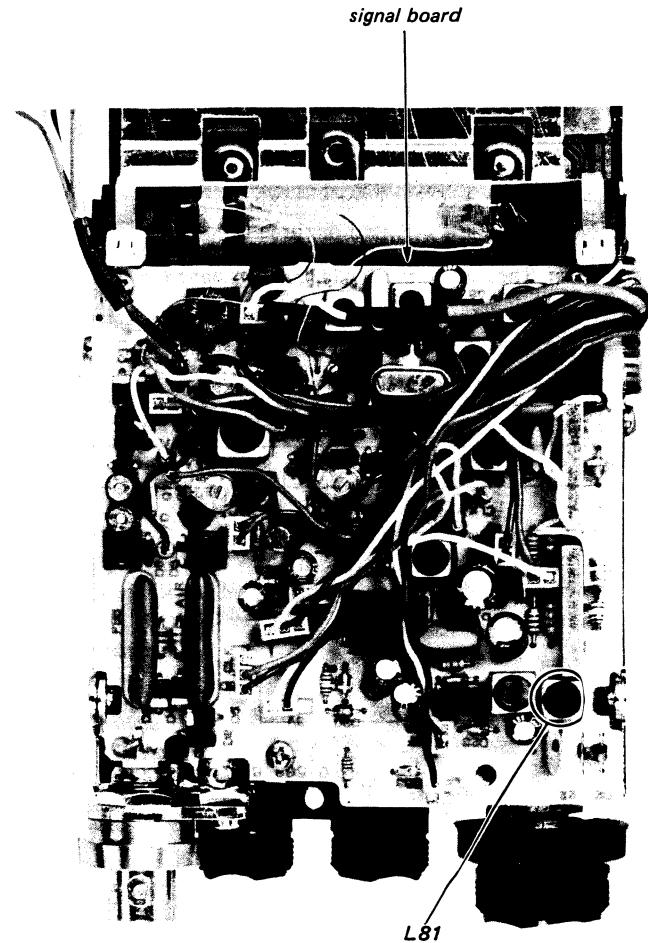
Procedure:

Note:
See page 22 for connecting point of 10pF capacitor.



Carrier frequency: 93MHz
Modulation: $\pm 22.5\text{kHz}$ frequency deviation by 400Hz signal (30%)
Output level: 54dB

1. Tune the set to 93MHz.
2. Adjust L81 for a minimum reading on distortion meter.



FM Tracking Adjustment

Setting:

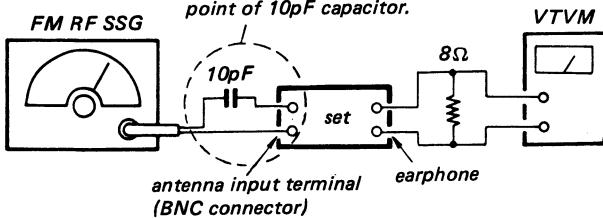
- This adjustment should be made after FM/PSB/AM VCO adjustment (See page 24).
- Band selector: FM

PRECAUTION:

Adjustments should be made with signal board set to chassis A, and PLL board and key board set to chassis B.

Procedure:

Note:
See page 22 for connecting point of 10pF capacitor.



Modulation: $\pm 22.5\text{kHz}$ frequency deviation by 400Hz signal (30%)

Output level: As low as possible around 10dB.

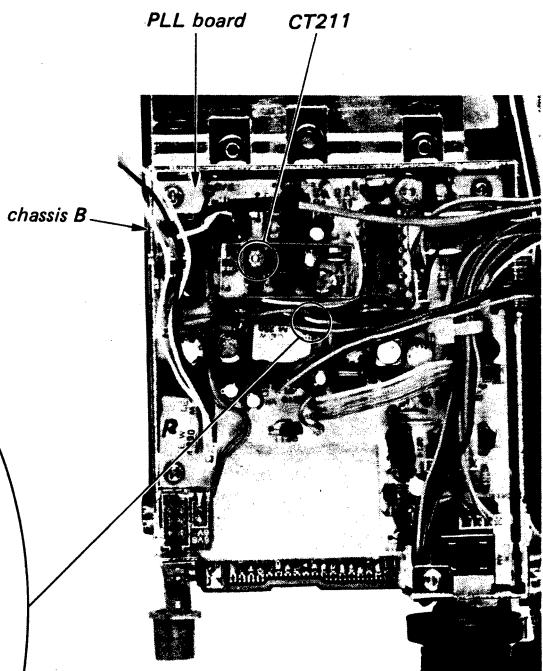
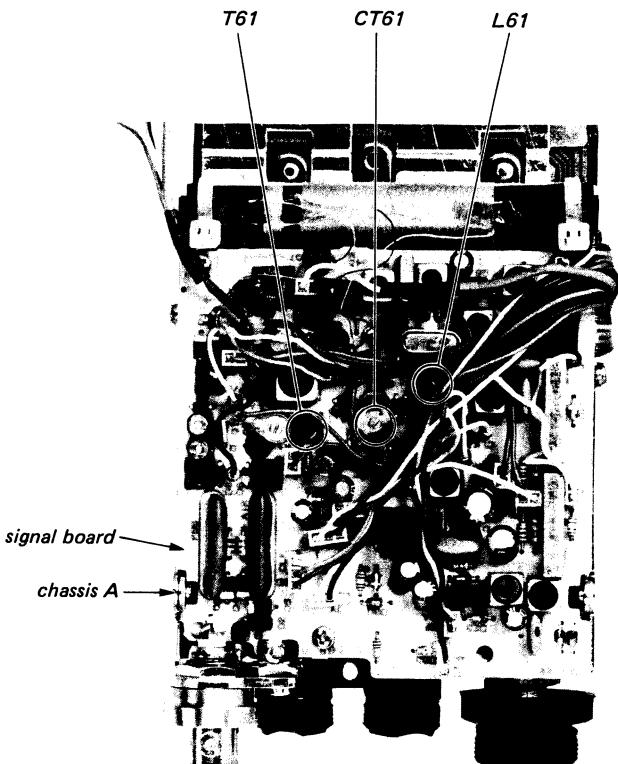
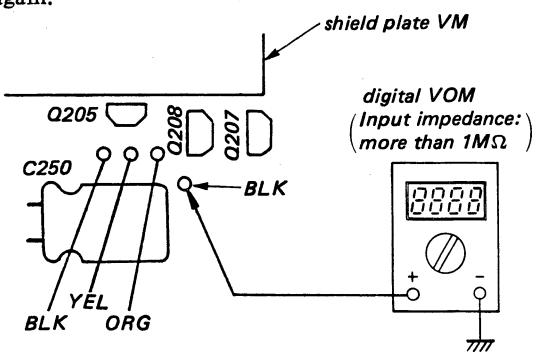
1. Carrier frequency of FM RF SSG: 76MHz
2. Tune the set to 76MHz.
3. Adjust T61, L61 for a maximum reading on VTVM.
4. Carrier frequency of FM RF SSG: 108MHz
5. Tune the set to 108MHz.
6. Adjust CT61, CT211 for a maximum reading on VTVM.
7. Repeat steps 1 – 6 two or three times.

Note: The adjustment should be finally done at step 6.

8. After adjustment, make sure that FM/PSB/AM VCO dc voltage is as follows at the receiving frequency of 76MHz and 108MHz.

receiving frequency	FM/PSB/AM VCO dc voltage
76MHz	$8.5 \pm 0.7\text{V}$
108MHz	$17.4 \pm 1.5\text{V}$

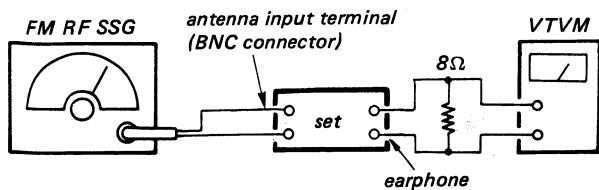
If necessary, make FM/PSB/AM VCO adjustment (See page 24). After that, make FM tracking adjustment again.



PSB Discriminator Adjustment

Setting: Band selector: PSB

Procedure:



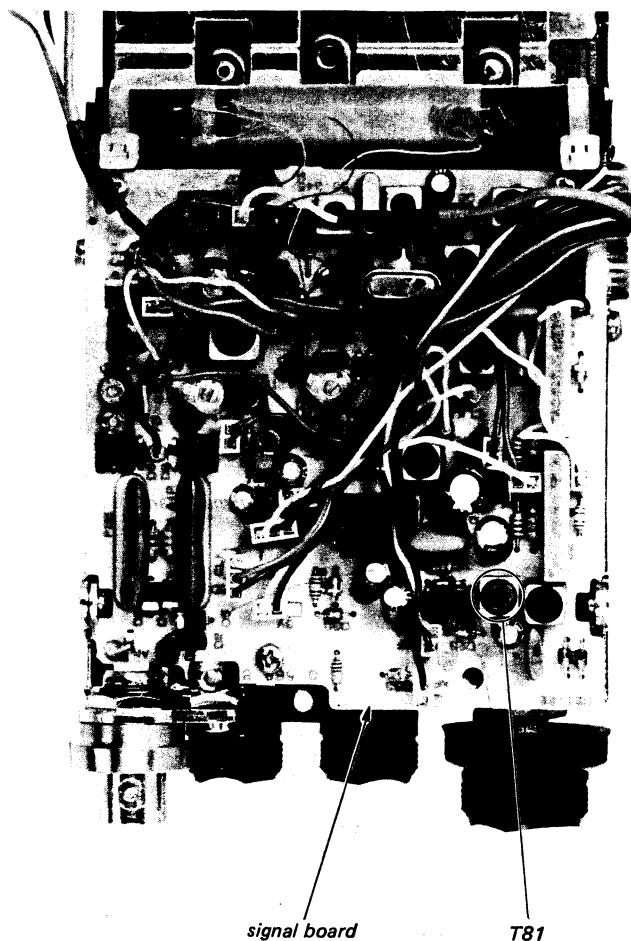
Carrier frequency: 150MHz

Modulation: 3.5kHz frequency deviation by

1kHz signal

Output level: As low as possible around -5dB

1. Tune the set to 150MHz.
2. Adjust T81 for a maximum reading on VTVM.



PSB Tracking Adjustment

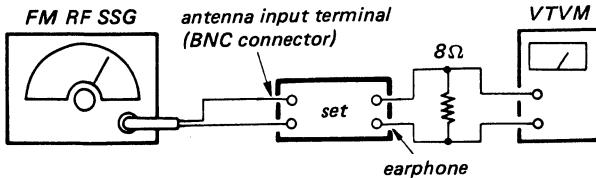
Setting:

- This adjustment should be made after FM/PSB/AM VCO adjustment and FM tracking adjustment.
(See page 24 and 28.)
- Band selector: PSB

PRECAUTION:

Adjustments should be made with signal board set to chassis A, and PLL board and key board set to chassis B.

Procedure:



Modulation: 3.5kHz frequency deviation by 1kHz signal

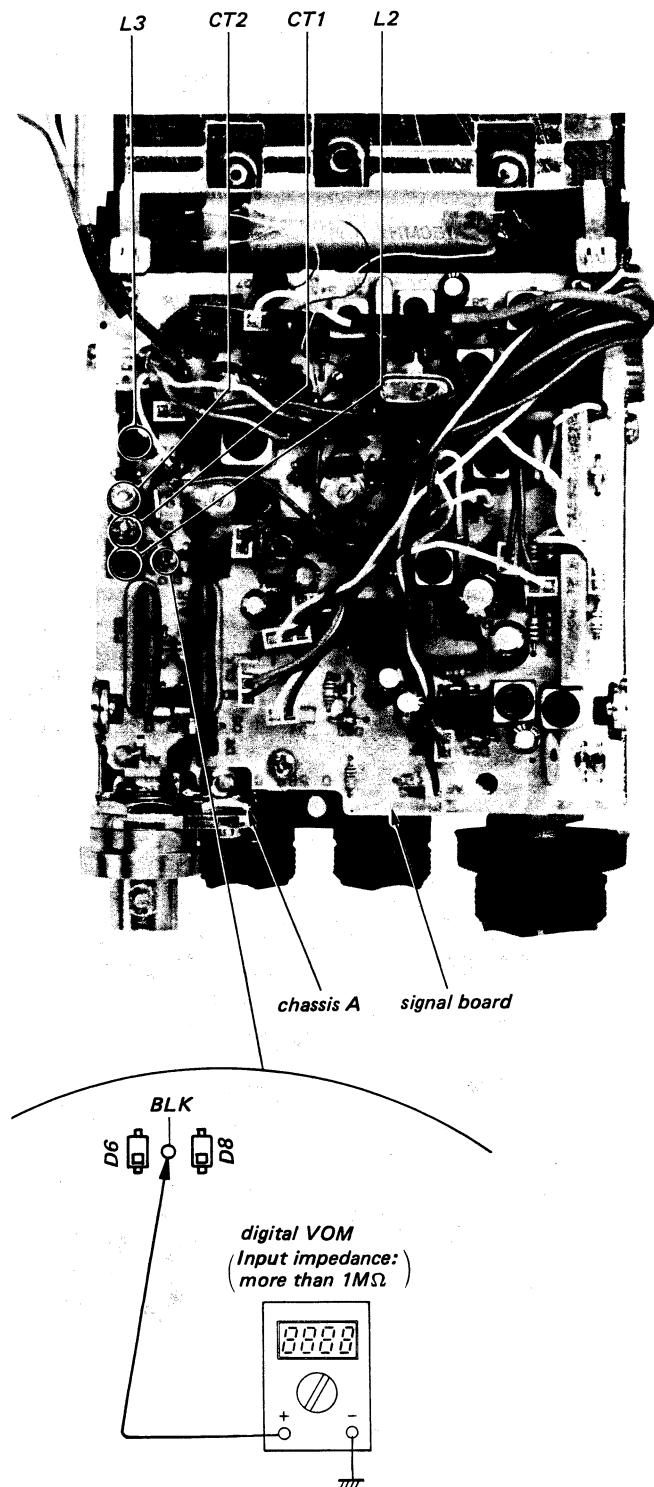
Output level: As low as possible around -5dB

1. Carrier frequency of FM RF SSG: 150MHz
2. Tune the set to 150MHz.
3. Adjust L2, L3 for a maximum reading on VTVM.
4. Carrier frequency of FM RF SSG: 174MHz
5. Tune the set to 174MHz.
6. Adjust CT1, CT2 for a maximum reading on VTVM.
7. Repeat 1 – 6 steps two or three times.

Note: The adjustment should be finally done at step 6.

8. After adjustment, make sure that FM/PSB/AM VCO dc voltage is as follows at the receiving frequency of 144MHz and 174MHz.

receiving frequency	FM/PSB/AM VCO dc voltage
144MHz	$8.9 \pm 0.7V$
174MHz	$17.1 \pm 1.5V$



SECTION 4
DIAGRAMS

AIR-7/8 AIR-7/8

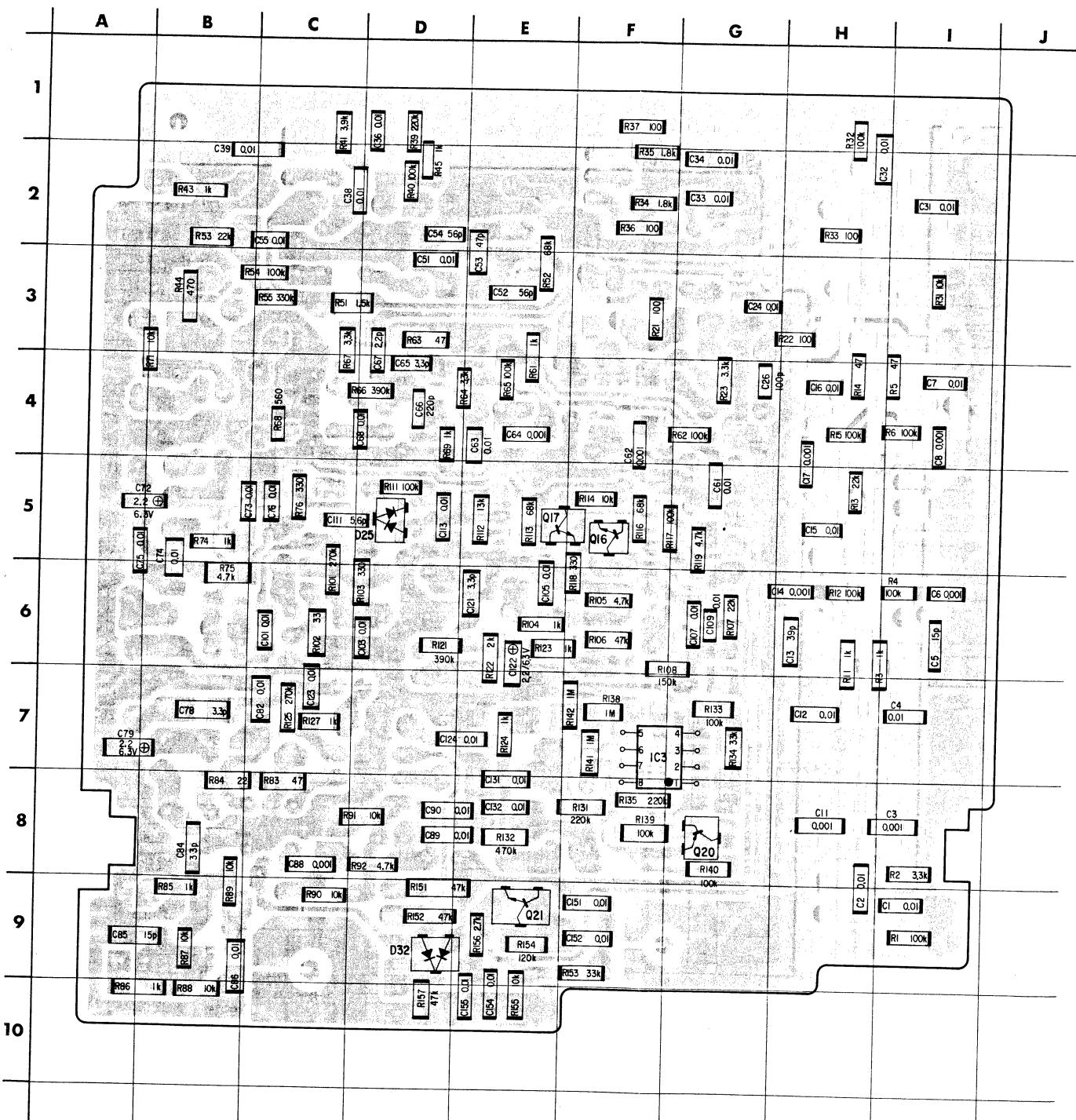
Location for MELF and Chip Components on
Mounting Diagram

The table below shows the location for MELF and chip components to look for them easily on the mounting diagram.

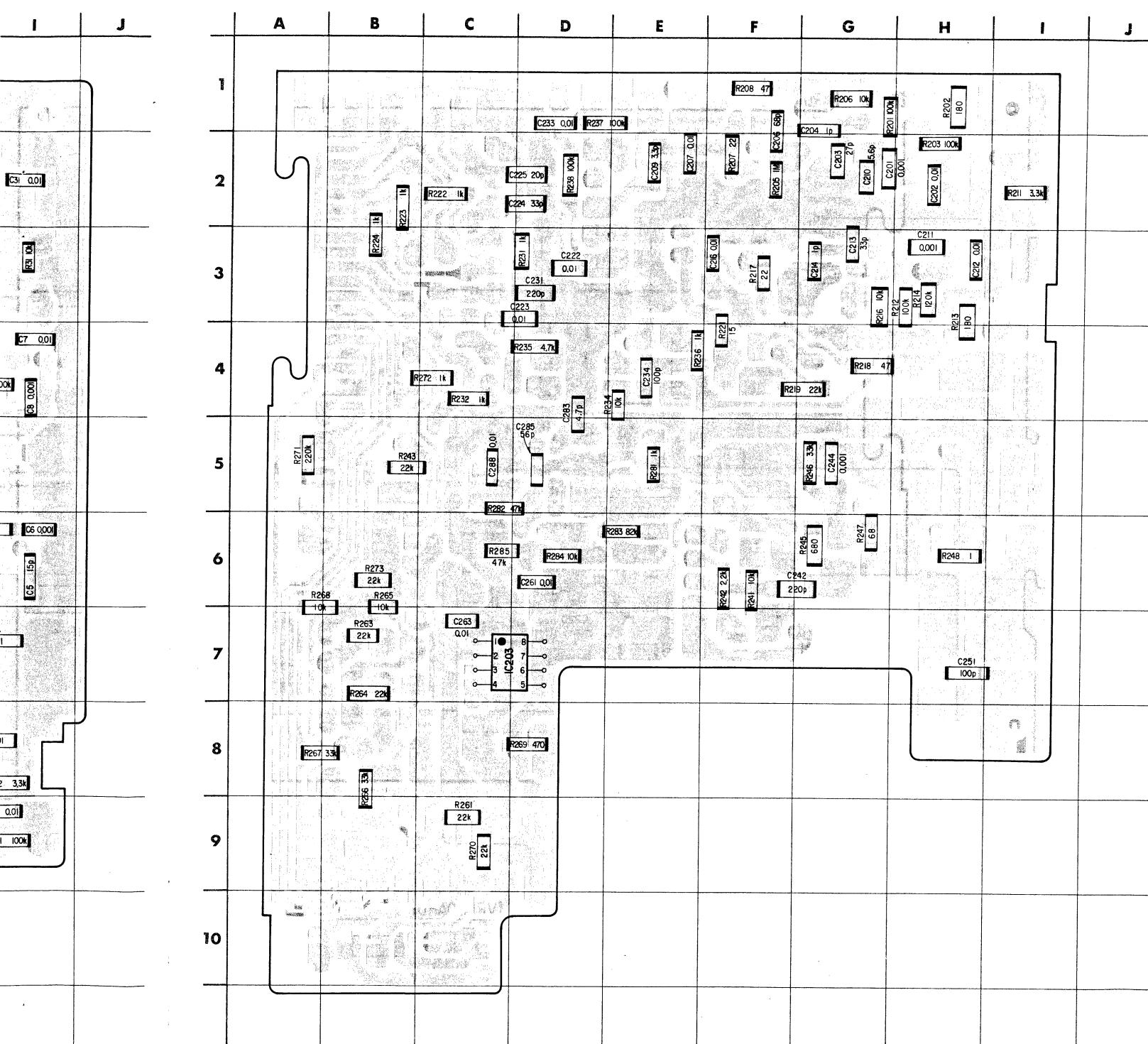
Note: The parts marked with * are mounted on
PC board for 3 band model (AEP-1, E model),
but they are not used.

SIGNAL BOARD												
SEMICONDUCTORS		CAPACITORS		RESISTORS		IC		RESISTORS		PLL BOARD		
Ref. No.	Location No.	Ref. No.	Location No.	Ref. No.	Location No.	Ref. No.	Location No.	Ref. No.	Location No.	Ref. No.	Location No.	
IC3	F-7	C1	I-9	C90	D-8	R1	I-9	R88	B-10	IC203	C-7	
		C2	H-9	C101	C-6	R2	I-8	R89	B-9		R201	G-1
Q16	F-5	*C3	I-8	C103	D-6	*R3	H-6	R90	C-9		R202	H-1
Q17	E-5	*C4	I-7	C105	E-6	*R4	I-6	R91	D-8		R203	H-2
Q20	G-8	*C5	I-6	C107	G-6	*R5	I-4	R92	D-8		R205	F-2
Q21	E-9										R206	G-1
D25	D-5	*C6	I-6	C109	G-6	*R6	I-4	R101	C-6		R207	F-2
D32	D-9	*C7	I-4	C111	C-5	R11	H-6	R102	C-6		R208	F-1
		*C8	I-4	C113	D-5	R12	H-6	R103	D-6		R211	I-2
		C11	H-8	C121	E-6	R13	H-5	R104	E-6		R212	H-3
		C12	H-7	C122	E-6	R14	H-4	R105	F-6		R213	H-3
		C13	H-6	C123	C-7	R15	H-4	R106	F-6		R214	H-3
		C14	H-6	C124	D-7	R21	F-3	R107	G-6		R216	G-3
		C15	H-5	C131	E-8	R22	H-3	R108	F-6		R217	F-3
		C16	H-4	C132	E-8	R23	G-4	R111	D-5		R218	G-4
		C17	H-5	C151	F-9	R31	I-3	R112	E-5		R219	G-4
		C24	G-3	C152	F-9	R32	H-1	R113	E-5		C207	E-2
		C26	G-4	C154	E-10	R33	H-2	R114	F-5		C209	E-2
		C31	I-2	C155	E-10	R34	F-2	R116	F-5		C210	G-2
		C32	H-2			R35	F-2	R117	F-5		C211	H-3
		C33	G-2			R36	F-2	R118	F-6		C212	H-3
		C34	G-2								C221	F-4
		C36	D-1			R37	F-1	R119	G-5		C222	D-3
		C38	C-2			R39	D-1	R121	D-6		C223	D-3
		C39	B-2			R40	D-2	R122	E-6		C232	C-4
		C51	D-3			R41	C-1	R123	E-6		C234	E-4
		C52	E-3			R43	B-2	R124	E-7		C235	D-4
		C53	E-3								C236	E-4
		C54	D-2			R44	B-3	R125	C-7		C237	D-1
		C55	C-2			R45	D-2	R127	C-7		C225	D-2
		C61	G-5			R51	C-3	R131	F-8		C231	D-3
		C62	F-4			R52	E-3	R132	E-8		C233	D-1
		C63	E-4			R53	B-2	R133	G-7		R238	D-2
		C64	E-4			R54	C-3	R134	G-7		R241	F-6
		C65	D-4			R55	C-3	R135	F-8		R242	F-6
		C66	D-4			R61	E-4	R138	F-7		R243	B-5
		C67	D-3			R62	G-4	R139	F-8		R244	G-5
		C68	D-4			R63	D-3	R140	G-8		R245	G-6
		C69	D-4			R64	D-4	R141	F-7		R246	G-5
		C70	A-5			R65	E-4	R142	F-7		R247	G-6
		C73	B-5			R66	D-4	R151	D-9		R248	H-6
		C74	B-5			R67	C-3	R152	D-9		R261	C-9
		C75	A-5			R68	C-4	R153	F-9		R263	B-7
		C76	C-5			R69	D-4	R154	E-9		R264	B-7
		C78	B-7			R71	A-3	R155	E-10		R265	B-6
		C79	A-7			R74	B-5	R156	E-9		R266	B-8
		C82	C-7			R75	B-6	R157	D-10		R267	A-8
		C84	B-8			R76	C-5				R268	A-6
		C85	A-9			R83	C-8				R269	D-8
		C86	B-9			R84	B-8				R270	C-9
		C88	C-8			R85	B-9				R271	A-5
		C89	D-8			R86	A-10				R272	C-4
						R87	B-9				R273	B-6
											R281	E-5
											R282	C-5
											R283	E-6
											R284	D-6
											R285	C-6

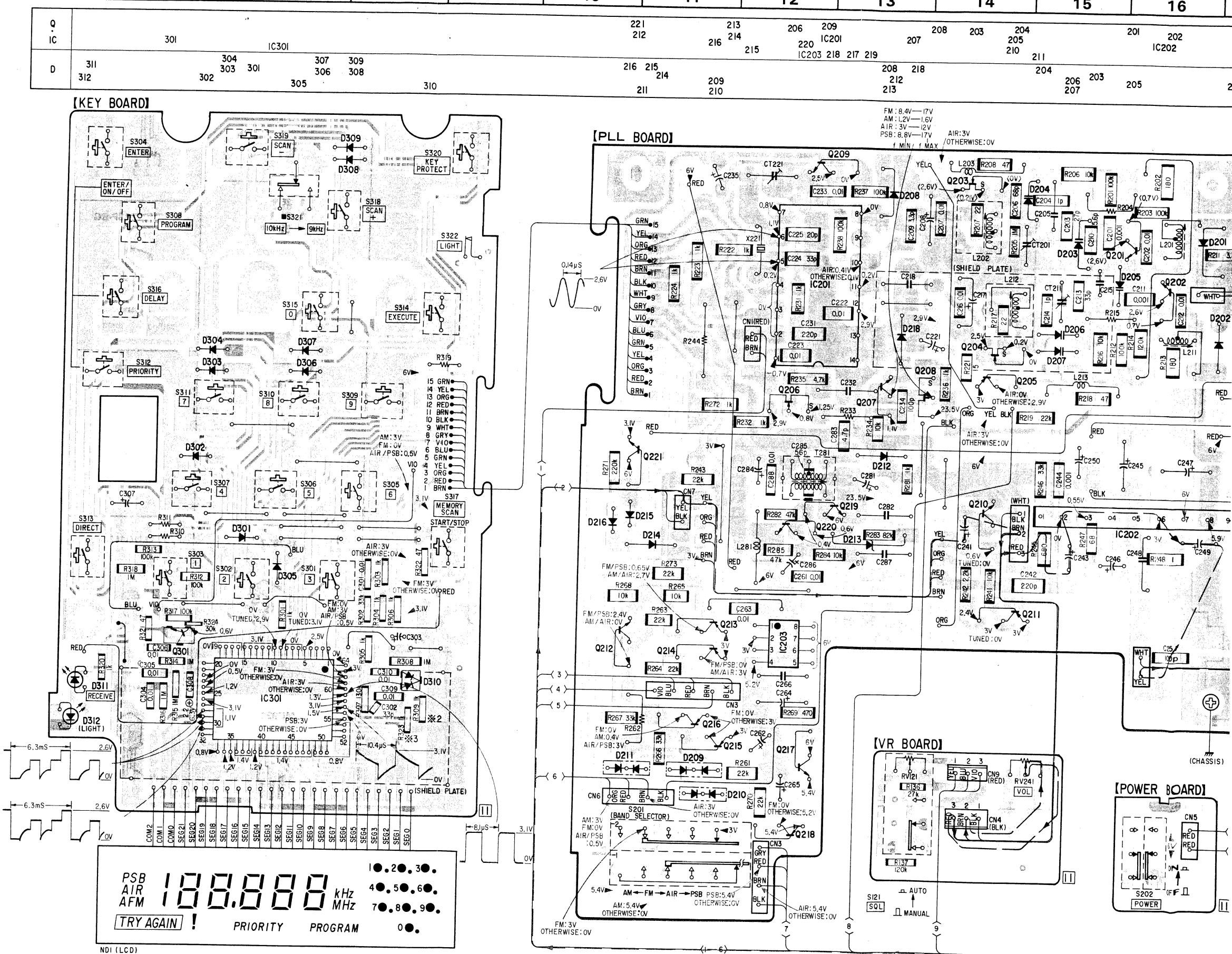
4.1. MOUNTING DIAGRAM – Signal Board –

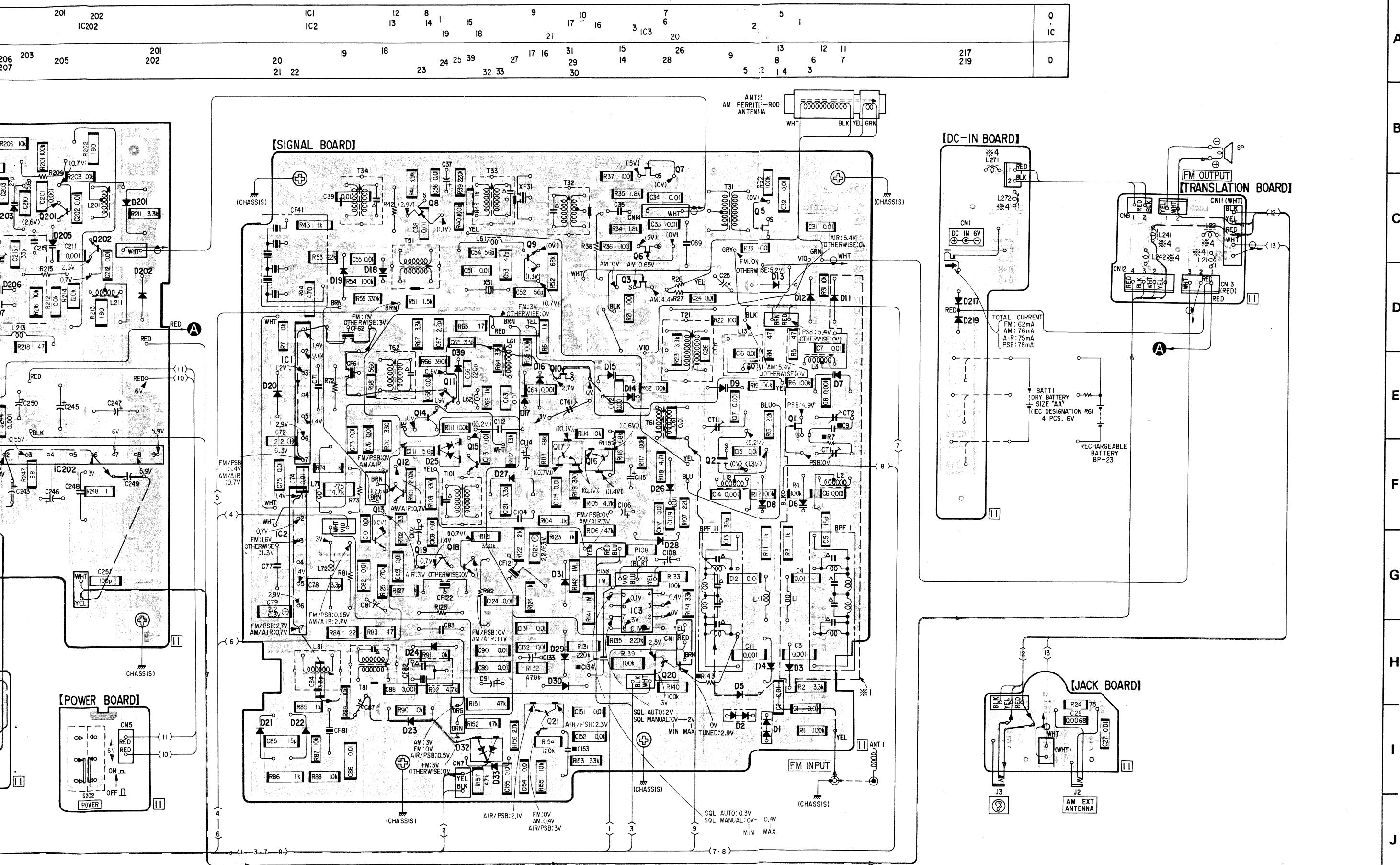


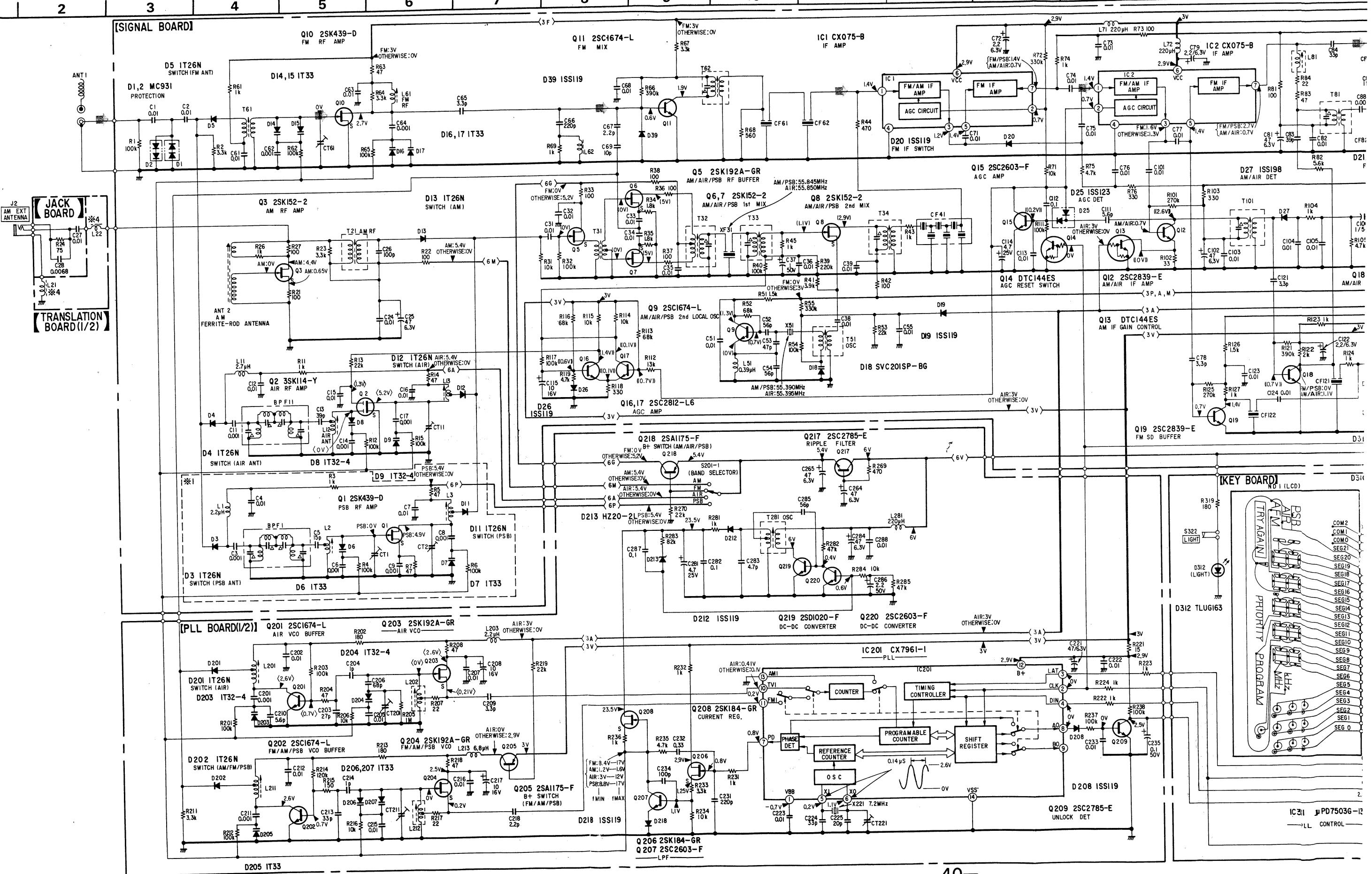
4-2. MOUNTING DIAGRAM - PLL Board -

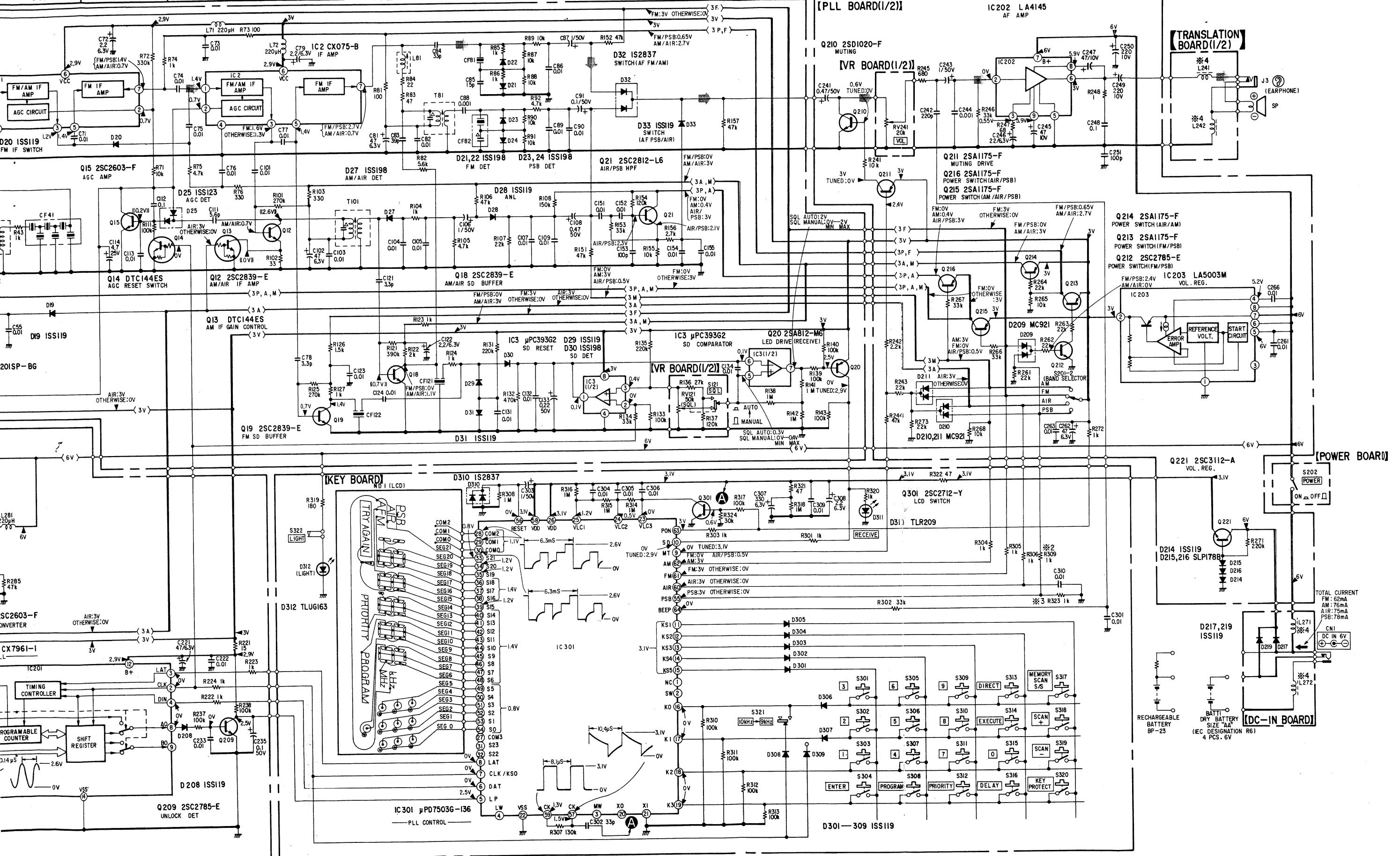


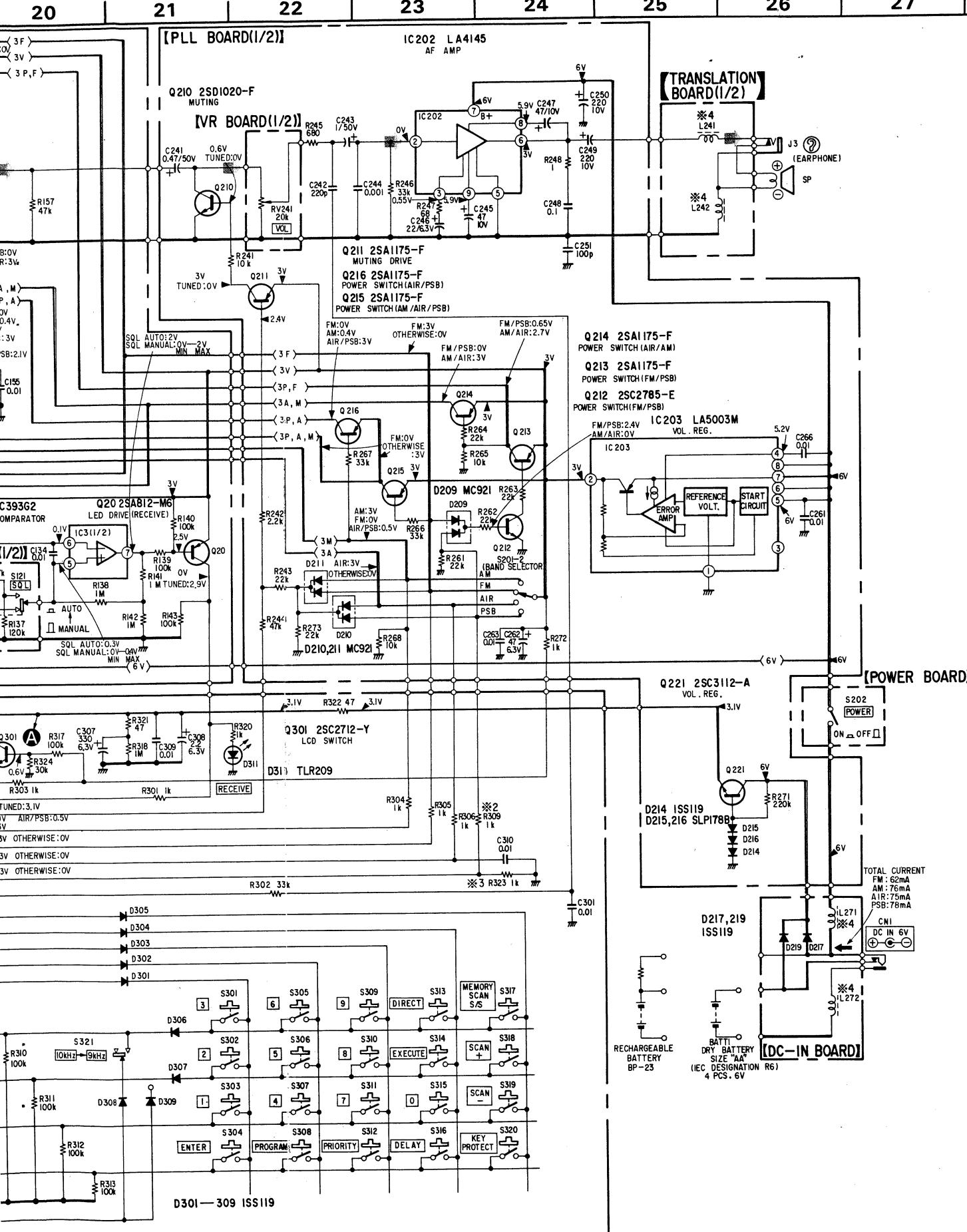
- ○— : parts extracted from the component side.
- —●— : parts extracted from the conductor side.
- ■— : part mounted on the conductor side.
- []— : indicates side identified with part number.
- —→— : signal path
- ⋮ : R + pattern











Note:

- All capacitors are in μF unless otherwise noted. μF : μF 50 WV or less are not indicated except for electrolytic and tantalums.
- All resistors are in Ω and $1/4\text{W}$ or less unless otherwise specified.
-  : signal path.
-  : internal component.
-  : B+ bus.
-  : adjustment for repair.
- Total current is measured at detuned mode with VO knob turned to the counterclockwise (MIN).
- Power voltage is 6V and fed with regulated dc power supply from DC IN 6V (external power input) jack. Voltages are dc with respect to ground in detuned mode. Voltage variations may be noted due to normal production tolerances.
Measured at FM 76.000MHz on LCD.
no mark: FM
() : AM/AIR/PSB
(()) : AM/AIR
< > : AIR
- Switch

Ref. No.	Switch	Position
S121	SQL	MANUAL
S201	BAND SELECTOR	FM
S202	POWER	OFF
S301	3	OFF
S302	2	OFF
S303	1	OFF
S304	ENTER	OFF
S305	6	OFF
S306	5	OFF
S307	4	OFF
S308	PROGRAM	OFF
S309	9	OFF
S310	8	OFF
S311	7	OFF
S312	PRIORITY	OFF
S313	DIRECT	OFF
S314	EXECUTE	OFF
S315	0	OFF
S316	DELAY	OFF
S317	MEMORY SCAN S/S	STOP
S318	SCAN +	OFF
S319	SCAN -	OFF
S320	KEY PROTECT	OFF
S321	10kHz/9kHz SELECT	10kHz
S322	LIGHT	OFF

NOTE: Parts marked * 1 to 4 differ from each model

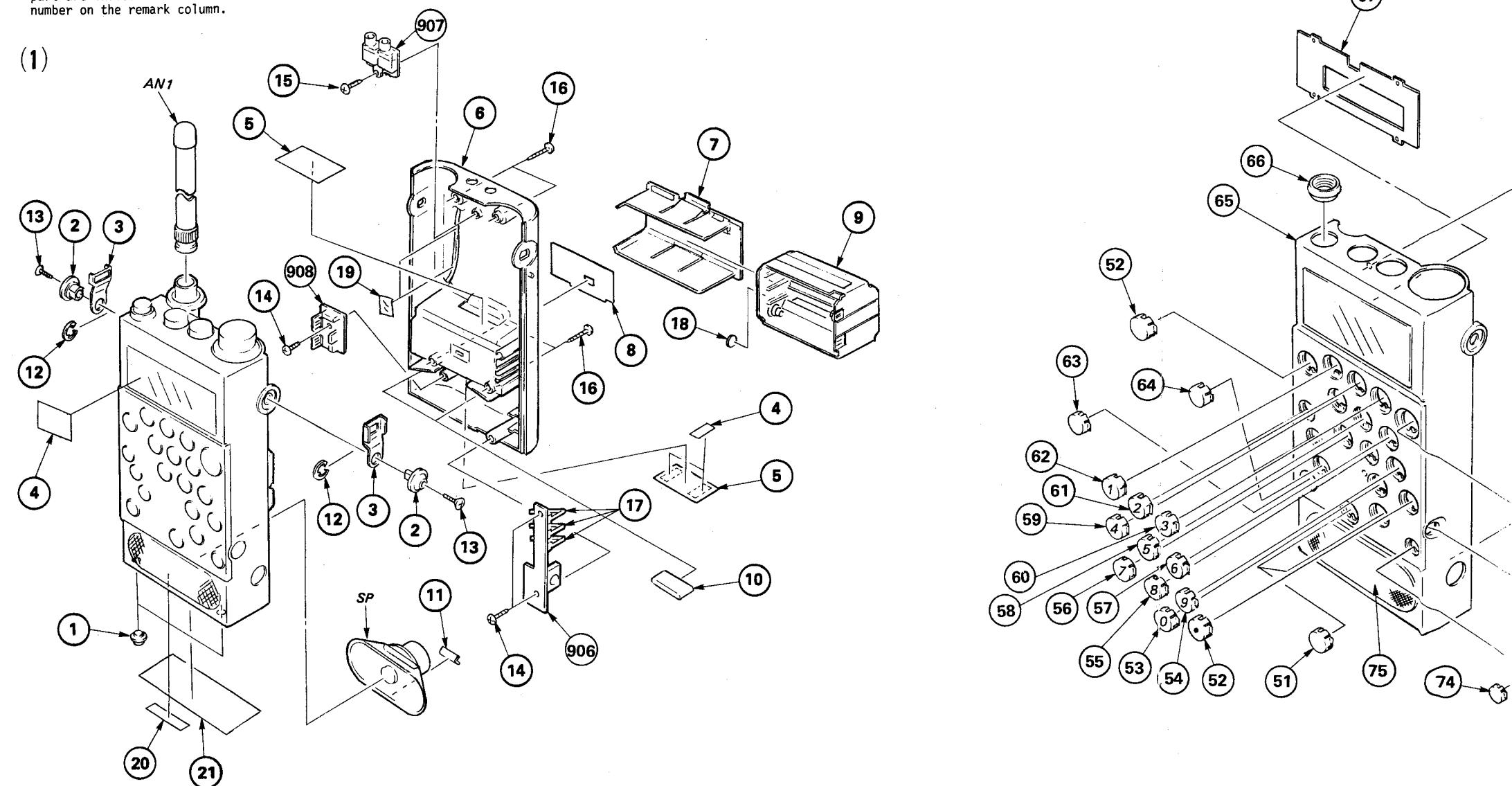
	AIR-7		AIR-8
	AEP-1, E model	Canadian, AEP-2 model	
* 1 (PSB RF CIRCUIT)	mounted on PC board, but not used	used	
* 2 (R309)	not mounted	mounted	
* 3 (R323)	mounted	not mounted	
* 4 (L21, 22, 241, 242, 271, 272)	shorted		mounted

SECTION 5
EXPLODED VIEWS

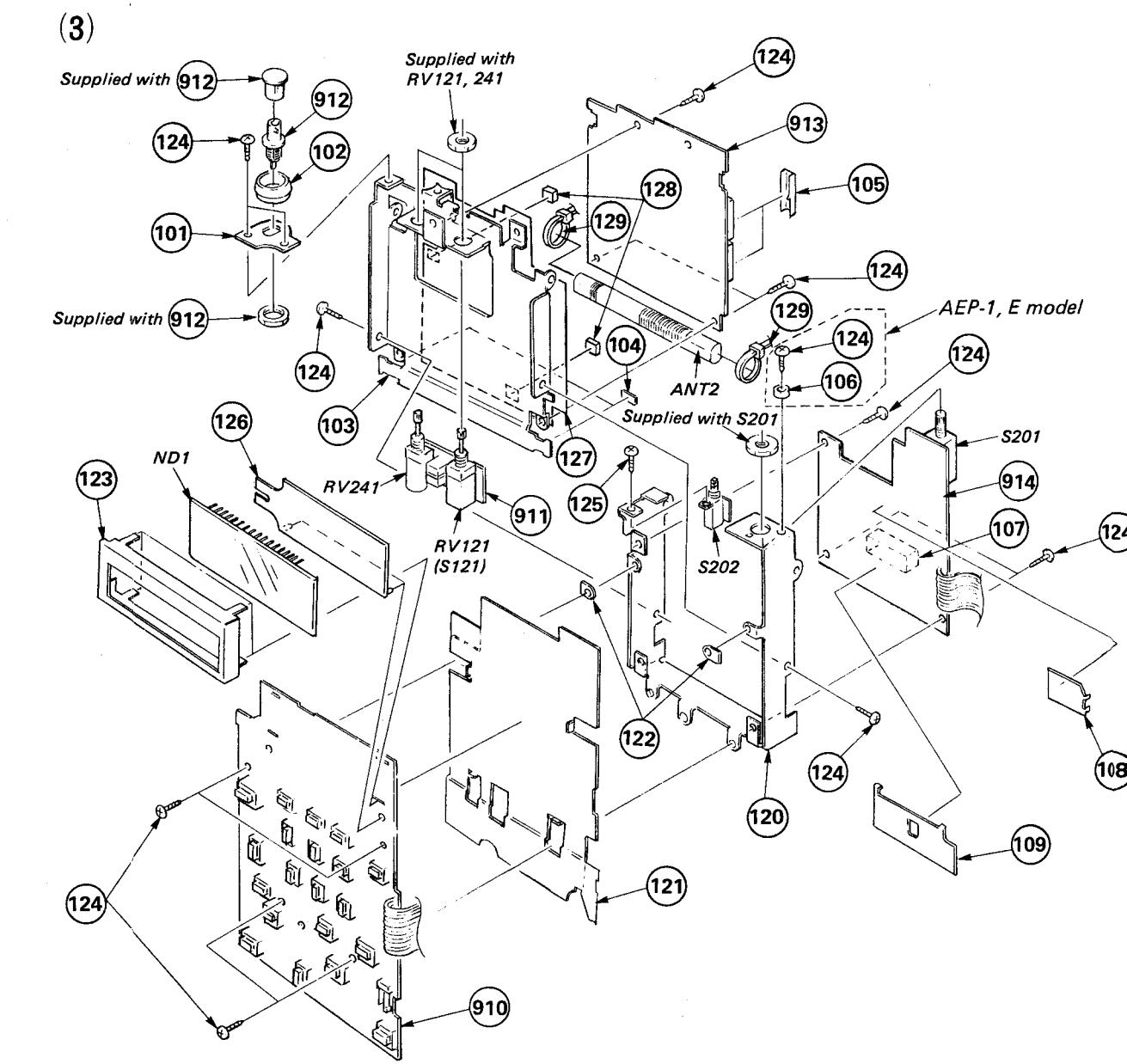
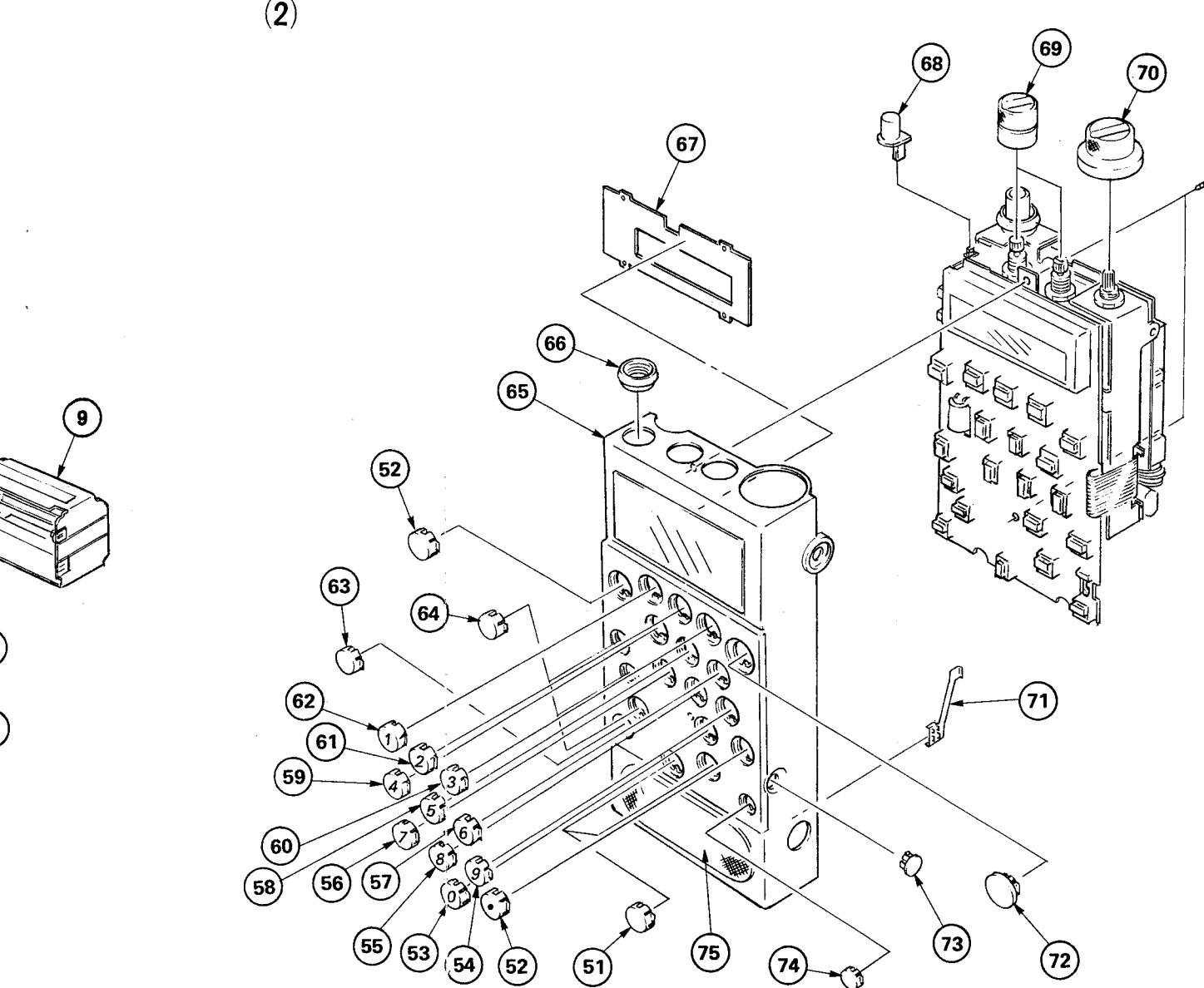
NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The construction parts of an assembled part are indicated with a collation number on the remark column.

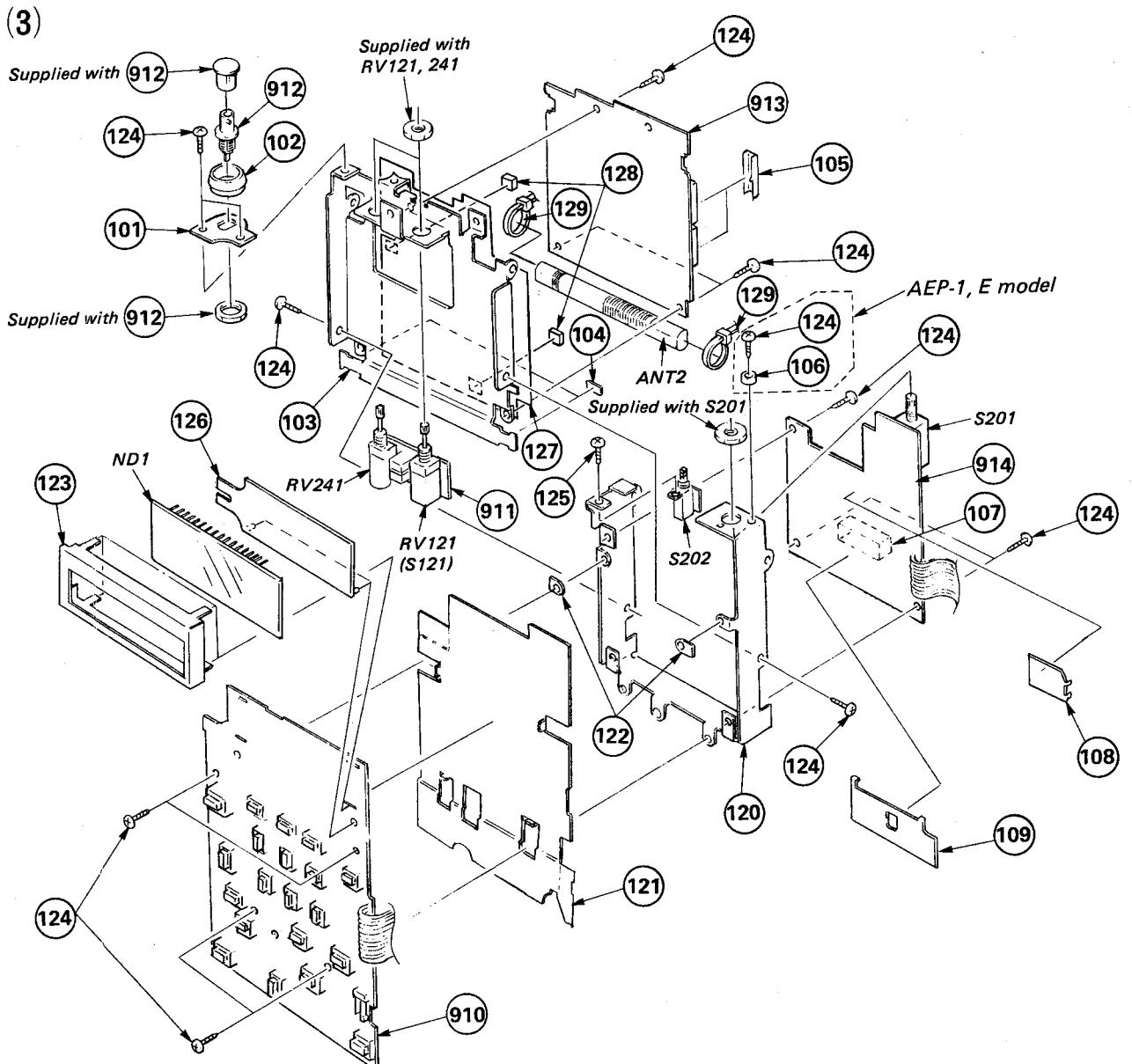
(2)



No.	Part No.	Description	REMARKS	No.	Part No.	Description	REMARKS	No.	Part No.	Description	REMARKS	No.	Part No.	Description	REMARKS
1	3-427-542-00	STOPER		14	7-685-134-14	SCREW +P 2.6X8 TYPE2 SLIT		51	3-893-704-11	BUTTON (B), MEMORY		65	X-		
2	3-893-726-01	COLLAR, BELT		15	7-621-773-86	SCREW +P 2.6X4		52	3-893-704-01	BUTTON (B), MEMORY		66	X-		
3	3-893-730-01	BRACKET, BELT		16	7-621-284-30	+P 2.6X8		53	3-893-703-01	BUTTON (A), MEMORY		67	3-		
4	*3-703-709-01	STICKER, SONY SYMBOL (15)		17	3-893-723-01	PLATE, POLE		54	3-893-703-91	BUTTON (A), MEMORY		68	3-		
5	3-893-722-01	PLATE, BLIND		18	3-527-126-00	MARK, BATTERY CASE		55	3-893-703-81	BUTTON (A), MEMORY		69	3-		
6	3-893-710-01	LID, REAR, CABINET		19	3-831-441-XX	CUSHION		56	3-893-703-71	BUTTON (A), MEMORY		70	3-		
7	3-893-706-01	HOLDER, BATTERY		20	3-701-999-00	LABEL, SERIAL NUMBER		57	3-893-703-61	BUTTON (A), MEMORY		71	3-		
8	3-893-736-01	LABEL, STEP, MW CH		21	3-893-735-01	(Canadian,AEP-2)...LABEL, MODEL NUMBER		58	3-893-703-51	BUTTON (A), MEMORY		72	3-		
9	X-3564-820-0	HOLDER ASSY, BATTERY			3-893-738-01	(AEP-1,E).....LABEL, MODEL NUMBER		59	3-893-703-41	BUTTON (A), MEMORY		73	3-		
10	3-881-931-00	CUSHION, SPEAKER			3-893-747-01	(AIR-8).....LABEL, MODEL NUMBER (U)		60	3-893-703-31	BUTTON (A), MEMORY		74	3-		
11	9-911-838-XX	CUSHION, SPEAKER		906	*1-613-291-11	PC BOARD, DC-IN		61	3-893-703-21	BUTTON (A), MEMORY		75	3-		
12	7-624-109-04	STOP RING 5.0, TYPE -E		907	*1-613-292-11	PC BOARD, JACK		62	3-893-703-11	BUTTON (A), MEMORY		76	7-		
13	7-621-662-80	SCREW +RK 2.6X12		908	*1-613-293-11	PC BOARD, TRANSLATION		63	3-893-716-11	BUTTON, DOUBLE KEY					
								64	3-893-716-01	BUTTON, DOUBLE KEY					



SECTION 6 ELECTRICAL PARTS LIST



NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.

- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μ F, PF: μ uF.
REISITORS
• All resistors are in ohms.
• F : nonflammable
COILS
• MMH : mH, UH : μ H

SEMICONDUCTORS
 In each case, $U : \mu$, for example:
 $UA\ldots : \mu A\ldots$, $UPA\ldots : \mu PA\ldots$,
 $UPC\ldots : \mu PC\ldots$,
 $UPD\ldots : \mu PD\ldots$

ELECTRICAL PARTS

Ref. No.	Part No.	Description
901	*1-508-995-00	PIN, CONNECTOR
902	*1-560-456-00	PIN, CONNECTOR 2P
903	*1-560-466-00	PIN, CONNECTOR 3P
904	
905	*1-560-467-00	PIN, CONNECTOR 4P
906	*1-613-291-11	PC BOARD, DC-IN
907	*1-613-292-11	PC BOARD, JACK
908	*1-613-293-11	PC BOARD, TRANSLATION
909	
910	*1-613-296-11	PC BOARD, KEY
911	*1-613-297-11	PC BOARD, VR
912	1-562-261-21	CONNECTOR, COAXIAL (BNC)
913	*A-3660-519-A	MOUNTED PCB, SIGNAL
914	*A-3661-009-A	MOUNTED PCB, PLL
ANT1	1-501-322-11	ANTENNA
ANT2	1-402-120-11	ANTENNA, FERRITE-ROD(AM)
BPF1	1-235-401-11	FILTER, BAND PASS
BPF11	1-235-402-11	FILTER, BAND PASS
C1	1-163-059-00	CERAMIC(CHIP)0.01MF
C2	1-163-059-00	CERAMIC(CHIP)0.01MF
C3	1-163-205-00	CERAMIC(CHIP)0.001MF
C4	1-163-059-00	CERAMIC(CHIP)0.01MF
C5	1-163-161-00	CERAMIC(CHIP)15PF
C6	1-163-205-00	CERAMIC(CHIP)0.001MF
C7	1-163-059-00	CERAMIC(CHIP)0.01MF
C8	1-163-205-00	CERAMIC(CHIP)0.001MF
C9	1-162-110-00	CERAMIC 0.001MF
C11	1-163-205-00	CERAMIC(CHIP)0.001MF
C12	1-163-059-00	CERAMIC(CHIP)0.01MF
C13	1-163-171-00	CERAMIC(CHIP)39PF
C14	1-163-205-00	CERAMIC(CHIP)0.001MF
C15	1-163-059-00	CERAMIC(CHIP)0.01MF
C16	1-163-059-00	CERAMIC(CHIP)0.01MF
C17	1-163-205-00	CERAMIC(CHIP)0.001MF
C24	1-163-059-00	CERAMIC(CHIP)0.01MF
C25	1-123-647-00	ELECT 47MF
C26	1-163-181-00	CERAMIC(CHIP)100PF
C27	1-163-059-00	CERAMIC(CHIP)0.01MF
C28	1-162-402-11	CERAMIC 0.0068MF
C31	1-163-059-00	CERAMIC(CHIP)0.01MF
C32	1-163-059-00	CERAMIC(CHIP)0.01MF
C33	1-163-059-00	CERAMIC(CHIP)0.01MF
C34	1-163-059-00	CERAMIC(CHIP)0.01MF
C35	1-161-032-00	CERAMIC(CHIP)0.01MF
C36	1-163-059-00	CERAMIC(CHIP)0.01MF

ELECTRICAL PARTS

Ref. No.	Part No.	Description		20%	50V
C37	1-123-611-00	ELECT	1MF	20%	50V
C38	1-163-059-00	CERAMIC(CHIP)	0.01MF	30%	16V
C39	1-163-059-00	CERAMIC(CHIP)	0.01MF	30%	16V
C51	1-163-059-00	CERAMIC(CHIP)	0.01MF	30%	16V
C52	1-163-175-00	CERAMIC(CHIP)	56PF	5%	50V
C53	1-163-173-00	CERAMIC(CHIP)	47PF	5%	50V
C54	1-163-175-00	CERAMIC(CHIP)	56PF	5%	50V
C55	1-163-059-00	CERAMIC(CHIP)	0.01MF	30%	16V
C61	1-163-059-00	CERAMIC(CHIP)	0.01MF	30%	16V
C62	1-163-205-00	CERAMIC(CHIP)	0.001MF	10%	50V
C63	1-163-059-00	CERAMIC(CHIP)	0.01MF	30%	16V
C64	1-163-205-00	CERAMIC(CHIP)	0.001MF	10%	50V
C65	1-162-327-00	CERAMIC(CHIP)	3.3PF	10%	50V
C66	1-163-189-00	CERAMIC(CHIP)	220PF	10%	50V
C67	1-162-325-00	CERAMIC(CHIP)	2.2PF	10%	50V
C68	1-163-059-00	CERAMIC	0.01MF	30%	16V
C69	1-162-199-31	CERAMIC	10PF	5%	50V
C71	1-162-306-31	CERAMIC(CHIP)	0.01MF	20%	16V
C72	1-135-099-00	TANTAL(CHIP)	2.2MF	20%	6.3
C73	1-163-059-00	CERAMIC(CHIP)	0.01MF	30%	16V
C74	1-163-059-00	CERAMIC(CHIP)	0.01MF	30%	16V
C75	1-163-059-00	CERAMIC(CHIP)	0.01MF	30%	16V
C76	1-163-059-00	CERAMIC(CHIP)	0.01MF	30%	16V
C77	1-162-306-31	CERAMIC	0.01MF	20%	16V
C78	1-162-327-00	CERAMIC	3.3PF	10%	50V
C79	1-135-099-00	TANTAL(CHIP)	2.2MF	20%	6.3
C81	1-123-647-00	ELECT	47MF	20%	6.3
C82	1-163-059-00	CERAMIC(CHIP)	0.01MF	30%	16V
C83	1-162-213-31	CERAMIC	39PF	5%	50V
C84	1-163-169-00	CERAMIC(CHIP)	33PF	5%	50V
C85	1-163-161-00	CERAMIC(CHIP)	15PF	5%	50V
C86	1-163-059-00	CERAMIC(CHIP)	0.01MF	30%	16V
C87	1-123-611-00	ELECT	1MF	20%	50V
C88	1-163-205-00	CERAMIC(CHIP)	0.001MF	10%	50V
C89	1-163-059-00	CERAMIC(CHIP)	0.01MF	30%	16V
C90	1-163-059-00	CERAMIC(CHIP)	0.01MF	30%	16V
C91	1-123-607-00	ELECT	0.1MF	20%	50V
C101	1-163-059-00	CERAMIC(CHIP)	0.01MF	30%	16V
C102	1-123-647-00	ELECT	47MF	20%	6.3V
C103	1-163-059-00	CERAMIC(CHIP)	0.01MF	30%	16V
C104	1-162-306-31	CERAMIC	0.01MF	20%	16V
C105	1-163-059-00	CERAMIC(CHIP)	0.01MF	30%	16V
C106	1-123-611-00	ELECT	1MF	10%	50V
C107	1-163-059-00	CERAMIC(CHIP)	0.01MF	10%	16V
C108	1-123-610-00	ELECT	0.47MF	10%	50V

REMARKS

(FRONT) ASSY
ASSY

TE, BACK

1

No.	Part No.	Description	REMARKS	No.	Part No.	Description
101	*3-893-720-01	HOLDER, ANTENNA		123	*3-893-724-01	PLATE (L), SHIELD
102	3-893-719-01	RING, ANTENNA		124	7-621-773-86	SCREW +P 2.6X4
103	*3-893-711-01	CHASSIS (A)		125	7-621-255-25	SCREW +P 2X4
104	9-911-838-XX	CUSHION, SPEAKER		126	*3-893-721-01	CHIP, ILLUMINATION
105	*3-893-734-01	PLATE (I), SHIELD		127	*3-893-755-01	INSULATOR (C)
106	3-893-733-01	(AEP-1,E)...STOPPER, COLLER		128	9-911-840-XX	SPACER, RUBBER
107	*3-893-751-01	PLATE (VM), SHIELD		129	*3-671-893-00	CLAMP (LOW TYPE)
108	*X-3893-705-1	PLATE (D) ASSY, SHIELD		910	*1-613-296-11	PC BOARD, KEY
109	*X-3893-703-1	PLATE (V) ASSY, SHIELD		911	*1-613-297-11	PC BOARD, VR
120	*3-893-712-01	CHASSIS (B)		912	1-562-261-21	CONNECTOR, COAXIAL (BNC)
121	*X-3893-701-1	PLATE (K) ASSY, SHIELD		913	*A-3660-519-A	MOUNTED PCB, SIGNAL
122	*2-892-750-01	INSULATOR (K)		914	*A-3661-009-A	MOUNTED PCB, PLL

ELECTRICAL PARTS						ELECTRICAL PARTS						ELECTRICAL PARTS						ELECTRICAL PARTS					
Ref. No.	Part No.	Description				Ref. No.	Part No.	Description				Ref. No.	Part No.	Description				Ref. No.	Part No.	Description			
C109	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V		C234	1-163-181-00	CERAMIC(CHIP)100PF	10%	50V		CT1	1-141-272-00	CAP, TRIMMER			D207	8-713-309-00	DIODE 1T33-09				
C111	1-162-330-00	CERAMIC 5.6PF	10%	50V		C235	1-123-607-00	ELECT 0.1MF	20%	50V		CT2	1-141-272-00	CAP, TRIMMER			D208	8-719-911-19	DIODE 1SS119				
C112	1-136-165-00	FILM 0.1MF	5%	50V		C241	1-123-610-00	ELECT 0.47MF	20%	50V		CT11	1-141-257-00	CAP, TRIMMER			D209	8-719-000-06	DIODE MC921				
C113	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V		C242	1-163-189-00	CERAMIC(CHIP)220PF	10%	50V		CT61	1-141-257-00	CAP, TRIMMER			D210	8-719-000-06	DIODE MC921				
C114	1-123-616-00	ELECT 4.7MF	20%	25V		C243	1-123-611-00	ELECT 1MF	20%	50V		CT201	1-141-272-00	CAP, TRIMMER			D211	8-719-000-06	DIODE MC921				
C115	1-123-617-00	ELECT 10MF	20%	16V		C244	1-163-205-00	CERAMIC(CHIP)0.001MF	10%	50V		CT211	1-141-293-11	CAP, TRIMMER			D212	8-719-911-19	DIODE 1SS119				
C121	1-162-327-00	CERAMIC 3.3PF	10%	50V		C245	1-123-822-00	ELECT 47MF	20%	10V		CT221	1-141-227-00	TRIMAR, CERAMIC			D213	8-719-910-03	DIODE HZ20-3L				
C122	1-135-099-00	TANTAL(CHIP) 2.2MF	20%	6.3V		C246	1-123-618-00	ELECT 22MF	20%	6.3V		D1	8-719-000-12	DIODE MC931			D214	8-719-911-19	DIODE 1SS119				
C123	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V		C247	1-123-822-00	ELECT 47MF	20%	10V		D2	8-719-000-12	DIODE MC931			D215	8-719-912-43	DIODE SLP178B				
C124	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V		C248	1-136-165-00	FILM 0.1MF	5%	50V		D3	8-719-104-15	DIODE 1T26N			D216	8-719-912-43	DIODE SLP178B				
C131	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V		C249	1-123-308-00	ELECT 220MF	20%	10V		D4	8-719-104-15	DIODE 1T26N			D217	8-719-911-19	DIODE 1SS119				
C132	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V		C250	1-123-308-00	ELECT 220MF	20%	10V		D5	8-719-104-15	DIODE 1T26N			D218	8-719-911-19	DIODE 1SS119				
C133	1-123-608-00	ELECT 0.22MF	20%	50V		C251	1-163-181-00	CERAMIC(CHIP)100PF	10%	50V		D6	8-713-309-00	DIODE 1T33-09			D219	9-719-911-19	DIODE 1SS119				
C134	1-162-306-31	CERAMIC 0.01MF	20%	16V		C261	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V		D7	8-713-309-00	DIODE 1T33-09			D301	8-719-911-19	DIODE 1SS119				
C151	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V		C262	1-123-647-00	ELECT 47MF	20%	6.3V		D8	8-713-240-00	DIODE 1T32-4			D302	8-719-911-19	DIODE 1SS119				
C152	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V		C263	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V		D9	8-713-240-00	DIODE 1T32-4			D303	8-719-911-19	DIODE 1SS119				
C153	1-162-282-31	CERAMIC 100PF	10%	50V		C264	1-123-647-00	ELECT 47MF	20%	6.3V		D11	8-719-104-15	DIODE 1T26N			D304	8-719-911-19	DIODE 1SS119				
C154	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V		C265	1-123-647-00	ELECT 47MF	20%	6.3V		D12	8-719-104-15	DIODE 1T26N			D305	8-719-911-19	DIODE 1SS119				
C155	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V		C266	1-162-306-31	CERAMIC 0.01MF	20%	16V		D13	8-719-104-15	DIODE 1T26N			D306	8-719-911-19	DIODE 1SS119				
C201	1-163-205-00	CERAMIC(CHIP)0.001MF	10%	50V		C281	1-123-616-00	ELECT 4.7MF	20%	25V		D14	8-713-309-00	DIODE 1T33-09			D307	8-719-911-19	DIODE 1SS119				
C202	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V		C282	1-136-165-00	FILM 0.1MF	5%	50V		D15	8-713-309-00	DIODE 1T33-09			D308	8-719-911-19	DIODE 1SS119				
C203	1-163-167-00	CERAMIC(CHIP)27PF	5%	50V		C283	1-162-329-00	CERAMIC 4.7PF	10%	50V		D16	8-713-309-00	DIODE 1T33-09			D309	8-719-911-19	DIODE 1SS119				
C204	1-163-147-00	CERAMIC(CHIP)1PF	20%	50V		C284	1-123-647-00	ELECT 47MF	20%	6.3V		D17	8-713-309-00	DIODE 1T33-09			D310	8-719-100-05	DIODE 1S2837				
C205	1-161-013-00	CERAMIC 0.01MF	10%	25V		C285	1-163-175-00	CERAMIC 56PF	5%	50V		D18	8-719-912-03	DIODE SVC201SP-BG			D311	8-719-800-67	DIODE TLR209				
C206	1-162-190-31	CERAMIC 68PF	5%	50V		C286	1-123-612-00	ELECT 2.2MF	20%	50V		D19	8-719-911-19	DIODE 1SS119			D312	8-719-800-14	DIODE TLUG163				
C207	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V		C287	1-136-165-00	FILM 0.1MF	5%	50V		D20	8-719-911-19	DIODE 1SS119			IC1	8-759-600-75	IC CX-075B				
C208	1-123-617-00	ELECT 10MF	20%	16V		C288	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V		D21	8-719-918-88	DIODE 1SS198			IC2	8-759-600-75	IC CX-075B				
C209	1-162-327-00	CERAMIC 3.3PF	10%	50V		C301	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V		D22	8-719-918-88	DIODE 1SS198			IC3	8-759-100-93	IC UPC393G2				
C210	1-162-330-00	CERAMIC 5.6PF	10%	50V		C302	1-163-169-00	CERAMIC(CHIP)33PF	5%	50V		D23	8-719-918-88	DIODE 1SS198			IC201	8-757-961-01	IC CX-7961-1				
C211	1-163-205-00	CERAMIC(CHIP)0.001MF	10%	50V		C303	1-123-611-00	ELECT 1MF	20%	50V		D24	8-719-918-88	DIODE 1SS198			IC202	8-759-801-65	IC LA4145				
C212	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V		C304	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V		D25	8-719-101-23	DIODE 1SS123			IC203	8-759-801-15	IC LA5003M				
C213	1-163-169-00	CERAMIC(CHIP)33PF	5%	50V		C305	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V		D26	8-719-911-19	DIODE 1SS119			IC301	8-759-102-04	IC UPD7503G-136				
C214	1-163-147-00	CERAMIC(CHIP)1PF	20%	50V		C306	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V		D27	8-719-918-88	DIODE 1SS198			J2	1-507-917-00	JACK, AM EXT ANTENNA				
C215	1-161-013-00	CERAMIC 0.01MF	10%	25V		C307	1-123-297-00	ELECT 330MF	20%	6.3V		D28	8-719-911-19	DIODE 1SS119			J3	1-507-921-00	JACK, EARPHONE				
C216	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V		C308	1-135-099-00	TANTAL. CHIP 2.2MF	20%	6.3V		D29	8-719-911-19	DIODE 1SS119			L1	1-410-013-11	MICRO INDUCTOR 2.2UH				
C217	1-123-617-00	ELECT 10MF	20%	16V		C309	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V		D30	8-719-918-88	DIODE 1SS198			L2	1-459-551-11	COIL (WITH CORE)				
C218	1-162-191-31	CERAMIC 2.2PF	10%	50V		C310	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V		D31	8-719-911-19	DIODE 1SS119			L3	1-459-556-11	COIL (WITH CORE)				
C221	1-123-647-00	ELECT 47MF	20%	6.3V		CF41	1-527-392-00	FILTER, CERAMIC				D32	8-719-100-05	DIODE 1S2837			L11	1-410-014-11	MICRO INDUCTOR 2.7UH				
C222	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V		CF61	1-527-795-71	FILTER, CERAMIC				D33	8-719-911-19	DIODE 1SS119			L12	1-459-558-11	COIL (WITH CORE)				
C223	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V		CF62	1-527-795-71	FILTER, CERAMIC				D39	8-719-911-19	DIODE 1SS119			L13	1-459-559-11	COIL (WITH CORE)				
C224	1-163-169-00	CERAMIC(CHIP)33PF	5%	50V		CF81	1-567-050-00	FILTER, CERAMIC				D201	8-719-104-15	DIODE 1T26N			L21	1-407-882-00	(AIR-8)....COIL				
C225	1-163-164-00	CERAMIC 20PF	5%	50V		CF82	1-567-308-11	FILTER, CERAMIC				D202	8-719-104-15	DIODE 1T26N			L22	1-407-882-00	(AIR-8)....COIL				
C231	1-163-189-00	CERAMIC(CHIP)220PF	10%	50V		CF121	1-527-290-00	FILTER, CERAMIC				D203	8-713-240-00	DIODE 1T32-4			L51	1-408-903-11	MICRO INDUCTOR 0.39UH				
C232	1-136-171-00	FILM 0.33MF	5%	50V		CF122	1-527-483-00	FILTER, CERAMIC				D204	8-713-240-00	DIODE 1T32-4			L61	1-459-555-11	COIL (WITH CORE)				
C233	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V		CN1	1-507-459-00	JACK, DC IN 6V				D205	8-713-309-00	DIODE 1T33-09			L62	1-407-882-00	COIL				
												D206	8-713-309-00	DIODE 1T33-09			L71	1-408-579-31	MICRO INDUCTOR 220UH				

ELECTRICAL PARTS			ELECTRICAL PARTS			ELECTRICAL PARTS			ELECTRICAL PARTS					
Ref. No.	Part No.	Description	Ref. No.	Part No.	Description	Ref. No.	Part No.	Description	Ref. No.	Part No.	Description			
L72	1-408-579-31	MICRO INDUCTOR 220UH	Q211	8-729-612-77	TRANSISTOR 2SA1027R	R52	1-247-875-00	CARBON	68K	5%	1/6W			
L81	1-404-567-11	TRANSFORMER, IF	Q212	8-729-178-55	TRANSISTOR 2SC2785-E	R53	1-247-863-00	CARBON	22K	5%	1/6W			
L201	1-459-553-11	COIL (WITH CORE)	Q213	8-729-612-77	TRANSISTOR 2SA1027R	R54	1-247-879-00	CARBON	100K	5%	1/6W			
L202	1-459-552-11	COIL (WITH CORE)	Q214	8-729-612-77	TRANSISTOR 2SA1027R	R55	1-247-891-00	CARBON	330K	5%	1/6W			
L203	1-408-555-00	MICRO INDUCTOR 2.2UH	Q215	8-729-612-77	TRANSISTOR 2SA1027R	R61	1-247-831-00	CARBON	1K	5%	1/6W			
L211	1-459-554-11	COIL (WITH CORE)	Q216	8-729-612-77	TRANSISTOR 2SA1027R	R62	1-247-879-00	CARBON	100K	5%	1/6W			
L212	1-459-550-11	COIL	Q217	8-729-178-55	TRANSISTOR 2SC2785-E	R63	1-247-799-00	CARBON	47	5%	1/6W			
L213	1-408-561-11	MICRO INDUCTOR 6.8UH	Q218	8-729-612-77	TRANSISTOR 2SA1027R	R64	1-247-843-00	CARBON	3.3K	5%	1/6W			
L241	1-407-882-00	(AIR-8)...COIL	Q219	8-729-102-03	TRANSISTOR 2SD1020-F	R65	1-247-879-00	CARBON	100K	5%	1/6W			
L242	1-407-882-00	(AIR-8)...COIL	Q220	8-729-606-33	TRANSISTOR 2SC2603-F	R66	1-247-893-00	CARBON	390K	5%	1/6W			
L271	1-407-882-00	(AIR-8)...COIL	Q221	8-729-201-83	TRANSISTOR 2SC3112-A	R67	1-247-843-00	CARBON	3.3K	5%	1/6W			
L272	1-407-882-00	(AIR-8)...COIL	Q301	8-729-271-22	TRANSISTOR 2SC2712-G	R68	1-247-825-00	CARBON	560	5%	1/6W			
L281	1-408-579-31	MICRO INDUCTOR 220UH	R1	1-247-879-00	CARBON	100K	5%	1/6W	R69	1-247-831-00	CARBON	1K	5%	1/6W
ND1	1-806-918-11	DISPLAY PANEL, LIQUID CRYSTAL	R2	1-247-843-00	CARBON	3.3K	5%	1/6W	R71	1-247-855-00	CARBON	10K	5%	1/6W
Q1	8-729-301-27	TRANSISTOR 2SK439-D	R3	1-247-831-00	CARBON	1K	5%	1/6W	R72	1-247-891-00	CARBON	330K	5%	1/6W
Q2	8-729-203-19	TRANSISTOR 3SK114-Y	R4	1-247-879-00	CARBON	100K	5%	1/6W	R73	1-247-807-00	CARBON	100	5%	1/6W
Q3	8-729-800-42	TRANSISTOR 2SK152-2	R5	1-247-799-00	CARBON	47	5%	1/6W	R74	1-247-831-00	CARBON	1K	5%	1/6W
Q5	8-729-200-66	TRANSISTOR 2SK192A-GR	R6	1-247-879-00	CARBON	100K	5%	1/6W	R75	1-247-847-00	CARBON	4.7K	5%	1/6W
Q6	8-729-800-42	TRANSISTOR 2SK152-2	R7	1-247-799-00	CARBON	47	5%	1/6W	R76	1-247-819-00	CARBON	330	5%	1/6W
Q7	8-729-800-42	TRANSISTOR 2SK152-2	R11	1-247-831-00	CARBON	1K	5%	1/6W	R81	1-247-807-00	CARBON	100	5%	1/6W
Q8	8-729-800-42	TRANSISTOR 2SK152-2	R12	1-247-879-00	CARBON	100K	5%	1/6W	R82	1-247-849-00	CARBON	5.6K	5%	1/6W
Q9	8-729-178-62	TRANSISTOR 2SC2786-L	R13	1-247-863-00	CARBON	22K	5%	1/6W	R83	1-247-799-00	CARBON	47	5%	1/6W
Q10	8-729-301-27	TRANSISTOR 2SK439-D	R14	1-247-799-00	CARBON	47	5%	1/6W	R84	1-247-791-00	CARBON	22	5%	1/6W
Q11	8-729-178-62	TRANSISTOR 2SC2786-L	R15	1-247-879-00	CARBON	100K	5%	1/6W	R85	1-247-831-00	CARBON	1K	5%	1/6W
Q12	8-729-883-92	TRANSISTOR 2SC2839-E	R21	1-247-807-00	CARBON	100	5%	1/6W	R86	1-247-831-00	CARBON	1K	5%	1/6W
Q13	8-729-900-89	TRANSISTOR DTC144ES	R22	1-247-807-00	CARBON	100	5%	1/6W	R87	1-247-855-00	CARBON	10K	5%	1/6W
Q14	8-729-900-89	TRANSISTOR DTC144ES	R23	1-247-843-00	CARBON	3.3K	5%	1/6W	R88	1-247-855-00	CARBON	10K	5%	1/6W
Q15	8-729-606-33	TRANSISTOR 2SC2603-F	R24	1-247-804-00	CARBON	75	5%	1/6W	R89	1-247-855-00	CARBON	10K	5%	1/6W
Q16	8-729-100-66	TRANSISTOR 2SC1623	R26	1-247-831-00	CARBON	1K	5%	1/6W	R90	1-247-855-00	CARBON	10K	5%	1/6W
Q17	8-729-100-66	TRANSISTOR 2SC1623	R27	1-247-807-00	CARBON	100	5%	1/6W	R91	1-247-855-00	CARBON	10K	5%	1/6W
Q18	8-729-883-92	TRANSISTOR 2SC2839-E	R31	1-247-855-00	CARBON	10K	5%	1/6W	R92	1-247-847-00	CARBON	4.7K	5%	1/6W
Q19	8-729-883-92	TRANSISTOR 2SC2839-E	R32	1-247-879-00	CARBON	100K	5%	1/6W	R101	1-247-889-00	CARBON	270K	5%	1/6W
Q20	8-729-100-76	TRANSISTOR 2SA812-M6	R33	1-247-807-00	CARBON	100	5%	1/6W	R102	1-247-795-00	CARBON	33	5%	1/6W
Q21	8-729-100-66	TRANSISTOR 2SC1623	R34	1-247-837-00	CARBON	1.8K	5%	1/6W	R103	1-247-819-00	CARBON	330	5%	1/6W
Q201	8-729-178-62	TRANSISTOR 2SC2786-L	R35	1-247-837-00	CARBON	1.8K	5%	1/6W	R104	1-247-831-00	CARBON	1K	5%	1/6W
Q202	8-729-178-62	TRANSISTOR 2SC2786-L	R36	1-247-807-00	CARBON	100	5%	1/6W	R105	1-247-847-00	CARBON	4.7K	5%	1/6W
Q203	8-729-200-66	TRANSISTOR 2SK192A-GR	R37	1-247-807-00	CARBON	100	5%	1/6W	R106	1-247-871-00	CARBON	47K	5%	1/6W
Q204	8-729-200-66	TRANSISTOR 2SK192A-GR	R38	1-247-807-00	CARBON	100	5%	1/6W	R107	1-247-863-00	CARBON	22K	5%	1/6W
Q205	8-729-117-54	TRANSISTOR 2SA1175-F	R39	1-247-887-00	CARBON	220K	5%	1/6W	R108	1-247-883-00	CARBON	150K	5%	1/6W
Q206	8-729-218-43	TRANSISTOR 2SK184-GR	R40	1-247-879-00	CARBON	100K	5%	1/6W	R111	1-247-879-00	CARBON	100K	5%	1/6W
Q207	8-729-606-33	TRANSISTOR 2SC2603-F	R41	1-247-845-00	CARBON	3.9K	5%	1/6W	R112	1-247-858-00	CARBON	13K	5%	1/6W
Q208	8-729-218-43	TRANSISTOR 2SK184-GR	R42	1-247-807-00	CARBON	100	5%	1/6W	R113	1-247-875-00	CARBON	68K	5%	1/6W
Q209	8-729-178-55	TRANSISTOR 2SC2785-E	R43	1-247-831-00	CARBON	1K	5%	1/6W	R114	1-247-855-00	CARBON	10K	5%	1/6W
Q210	8-729-102-03	TRANSISTOR 2SD1020-F	R44	1-247-823-00	CARBON	470	5%	1/6W	R115	1-247-855-00	CARBON	10K	5%	1/6W
			R45	1-247-831-00	CARBON	1K	5%	1/6W	R116	1-247-875-00	CARBON	68K	5%	1/6W
			R51	1-247-835-00	CARBON	1.5K	5%	1/6W						

ELECTRICAL PARTS

Ref. No.	Part No.	Description	22K	5%	1/6W
R219	1-247-863-00	CARBON	22K	5%	1/6W
R221	1-247-787-00	CARBON	15	5%	1/6W
R222	1-247-831-00	CARBON	1K	5%	1/6W
R223	1-247-831-00	CARBON	1K	5%	1/6W
R224	1-247-831-00	CARBON	1K	5%	1/6W
R231	1-247-831-00	CARBON	1K	5%	1/6W
R232	1-247-831-00	CARBON	1K	5%	1/6W
R233	1-247-843-00	CARBON	3.3K	5%	1/6W
R234	1-247-855-00	CARBON	10K	5%	1/6W
R235	1-247-847-00	CARBON	4.7K	5%	1/6W
R236	1-247-831-00	CARBON	1K	5%	1/6W
R237	1-247-879-00	CARBON	100K	5%	1/6W
R238	1-247-879-00	CARBON	100K	5%	1/6W
R241	1-247-855-00	CARBON	10K	5%	1/6W
R242	1-247-839-00	CARBON	2.2K	5%	1/6W
R243	1-247-863-00	CARBON	22K	5%	1/6W
R244	1-247-871-00	CARBON	47K	5%	1/6W
R245	1-247-827-00	CARBON	680	5%	1/6W
R246	1-247-867-00	CARBON	33K	5%	1/6W
R247	1-247-803-00	CARBON	68	5%	1/6W
R248	1-249-001-00	CARBON	1	5%	1/6W
R261	1-247-863-00	CARBON	22K	5%	1/6W
R262	1-247-863-00	CARBON	22K	5%	1/6W
R263	1-247-863-00	CARBON	22K	5%	1/6W
R264	1-247-863-00	CARBON	22K	5%	1/6W
R265	1-247-855-00	CARBON	10K	5%	1/6W
R266	1-247-867-00	CARBON	33K	5%	1/6W
R267	1-247-867-00	CARBON	33K	5%	1/6W
R268	1-247-855-00	CARBON	10K	5%	1/6W
R269	1-247-823-00	CARBON	470	5%	1/6W
R270	1-247-863-00	CARBON	22K	5%	1/6W
R271	1-247-887-00	CARBON	220K	5%	1/6W
R272	1-247-831-00	CARBON	1K	5%	1/6W
R273	1-247-863-00	CARBON	22K	5%	1/6W
R281	1-247-831-00	CARBON	1K	5%	1/6W
R282	1-247-871-00	CARBON	47K	5%	1/6W
R283	1-247-877-00	CARBON	82K	5%	1/6W
R284	1-247-855-00	CARBON	10K	5%	1/6W
R285	1-247-871-00	CARBON	47K	5%	1/6W
R301	1-247-831-00	CARBON	1K	5%	1/6W
R302	1-247-867-00	CARBON	33K	5%	1/6W
R303	1-247-831-00	CARBON	1K	5%	1/6W
R304	1-247-831-00	CARBON	1K	5%	1/6W
R305	1-247-831-00	CARBON	1K	5%	1/6W
R306	1-247-831-00	CARBON	1K	5%	1/6W
R307	1-247-882-00	CARBON	130K	5%	1/6W

ELECTRICAL PARTS

Ref. No.	Part No.	Description	1M	5%	1/6W
R308	1-247-903-00	CARBON	1K	5%	1/6W
R309	1-247-831-00	(AIR-8,Canadian,AEP-2)....CARBON	100K	5%	1/6W
R310	1-247-879-00	CARBON	100K	5%	1/6W
R311	1-247-879-00	CARBON	100K	5%	1/6W
R312	1-247-879-00	CARBON	100K	5%	1/6W
R313	1-247-879-00	CARBON	100K	5%	1/6W
R314	1-247-903-00	CARBON	1M	5%	1/6W
R315	1-247-903-00	CARBON	1M	5%	1/6W
R316	1-247-903-00	CARBON	1M	5%	1/6W
R317	1-247-879-00	CARBON	100K	5%	1/6W
R318	1-247-903-00	CARBON	1M	5%	1/6W
R319	1-247-813-00	CARBON	180	5%	1/6W
R320	1-247-831-00	CARBON	1K	5%	1/6W
R321	1-247-799-00	CARBON	47	5%	1/6W
R322	1-247-799-00	CARBON	47	5%	1/6W
R323	1-247-831-00	(AEP-1,E)....CARBON	1K	5%	1/6W
R324	1-247-866-00	CARBON	30K	5%	1/6W
RV121	1-230-538-11	RES, VAR, CARBON (WITH SW)	50K, SQL		
RV241	1-230-537-11	RES, VAR, CARBON (WITH SW)	20K, VOL		
S121	1-230-538-11	RES, VAR, CARBON (WITH SW)	50K, SQL		
S201	1-554-955-11	SWITCH, ROTARY, BAND SELECT			
S202	1-554-957-11	SWITCH, PUSH (1 KEY)			
S301	1-553-349-00	SWITCH, PUSH, 3			
S302	1-553-349-00	SWITCH, PUSH, 2			
S303	1-553-349-00	SWITCH, PUSH, 1			
S304	1-553-349-00	SWITCH, PUSH, ENTER			
S305	1-553-349-00	SWITCH, PUSH, 6			
S306	1-553-349-00	SWITCH, PUSH, 5			
S307	1-553-349-00	SWITCH, PUSH, 4			
S308	1-553-349-00	SWITCH, PUSH, PROGRAM			
S309	1-553-349-00	SWITCH, PUSH, 9			
S310	1-553-349-00	SWITCH, PUSH, 8			
S311	1-553-349-00	SWITCH, PUSH, 7			
S312	1-553-349-00	SWITCH, PUSH, PRIORITY			
S313	1-553-349-00	SWITCH, PUSH, DIRECT			
S314	1-553-349-00	SWITCH, PUSH, EXECUTE			
S315	1-553-349-00	SWITCH, PUSH, 0			
S316	1-553-349-00	SWITCH, PUSH, DELAY			
S317	1-553-349-00	SWITCH, PUSH, MEMORY SCAN S/S			
S318	1-553-349-00	SWITCH, PUSH, SCAN +			
S319	1-553-349-00	SWITCH, PUSH, SCAN -			
S320	1-553-349-00	SWITCH, PUSH, KEY PROTECT			
S321	1-553-977-31	SWITCH, SLIDE, 10kHz/9kHz SELECT			
S322	1-554-956-11	SWITCH, LEAF, LIGHT			
SP	1-503-374-11	SPEAKER			

ELECTRICAL PARTS

Ref. No.	Part No.	Description
T21	1-426-194-11	TRANSFORMER, HIGH-FREQUENCY
T31	1-426-193-11	TRANSFORMER, HIGH-FREQUENCY
T32	1-404-448-00	TRANSFORMER, IF
T33	1-404-568-11	TRANSFORMER, IF
T34	1-404-191-00	TRANSFORMER, IF
T51	1-406-052-00	COIL (OSC)
T61	1-459-557-11	COIL (WITH CORE)
T62	1-404-126-00	IFT (SMALL TYPE)
T81	1-404-191-00	TRANSFORMER, IF
T101	1-404-127-00	IFT (SMALL TYPE)
T281	1-406-112-11	COIL (OSC)
X51	1-567-302-11	VIBRATOR, CRYSTAL, 55.400MHz
X221	1-567-310-11	VIBRATOR, CRYSTAL, 7.2MHz
XF31	1-527-372-00	FILTER, CRYSTAL, 55.845MHz

ACCESSORY & PACKING MATERIAL

No.	Part No.	Description	REMARKS
151	1-504-059-11	MAGNETIC EARPHONE(ME-20H)	
152	3-701-295-00	BAC, POLYETHYLENE (FOR PRINTED MATTER)	
153	3-890-830-00	BAG, POLYETHYLENE (FOR SET)	
154	3-893-708-01	BELT, CARRYING	
155	3-893-736-01	LABEL, STEP, MW CH	
156	3-893-740-01	CASE, ACCESSORY	
157	3-893-745-01	CUSHION (UPPER)	
158	3-893-742-01	(Canadian,AEP-2)...INDIVIDUAL CARTON	
	3-893-743-01	(AEP-1,E).....INDIVIDUAL CARTON	
	3-893-748-01	(AIR-8).....INDIVIDUAL CARTON	
159	*3-893-744-01	CUSHION (LOWER)	
160	3-990-002-12	(Canadian,AEP,E)...MANUAL, INSTRUCTION	
	3-990-002-21	(AIR-8)....MANUAL, INSTRUCTION	
	3-990-002-41	(AEP).....MANUAL, INSTRUCTION	

SONY®
SERVICE MANUAL

SUPPLEMENT-2

File this supplement with the Service Manual.

Subject: PC BOARD CHANGE
(Except Canadian Model)

US Model
AIR-8
Canadian Model
AEP Model
UK Model
E Model
AIR-7

MELF components used as resistors, capacitors, and diode have been changed
to chip components on the production.

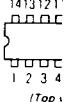
Because of this, pc board have been changed.

1. S

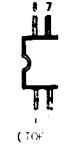
CX07E



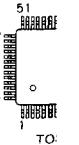
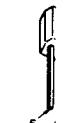
CX79E



LA414

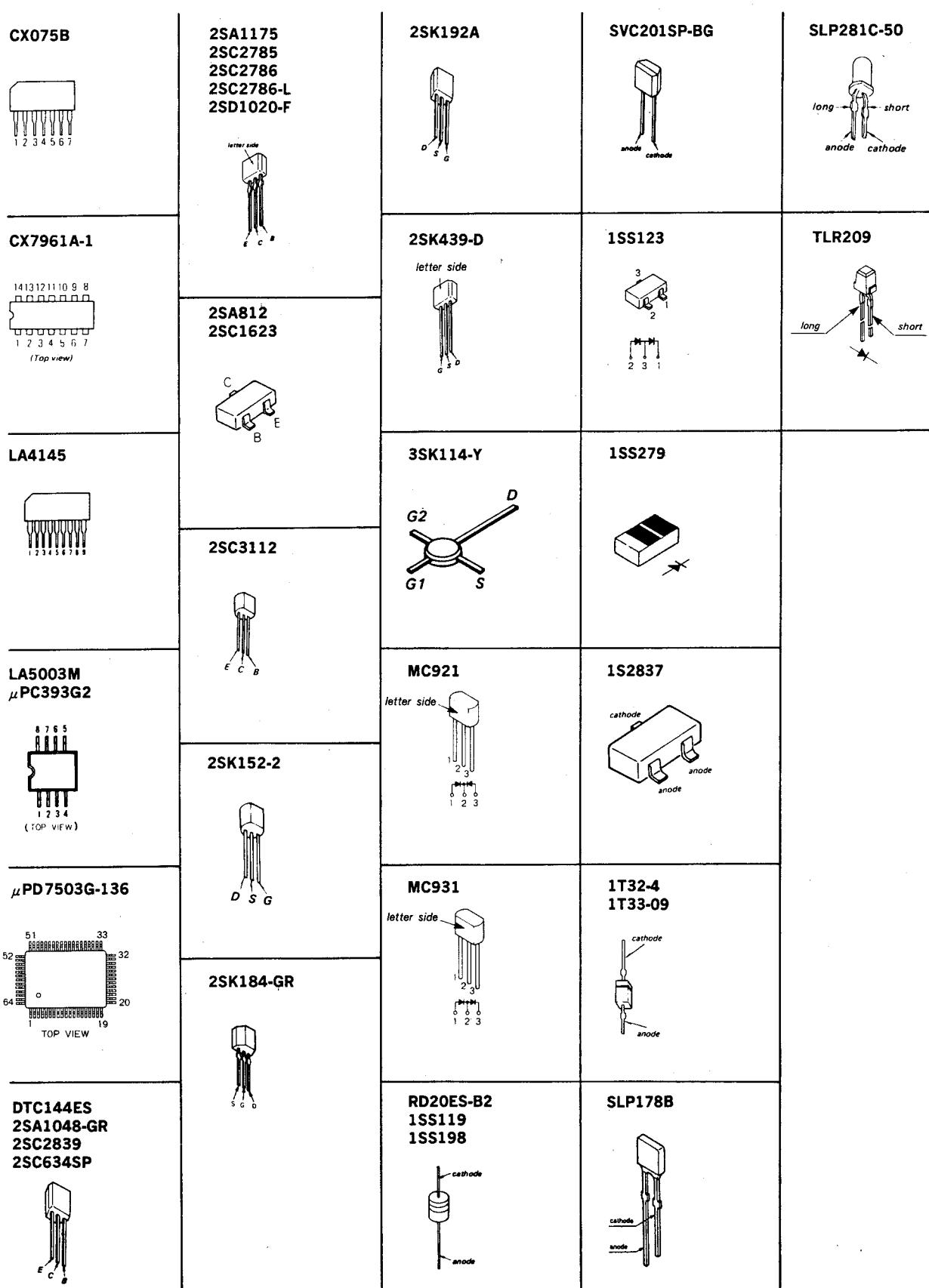
LA50C
μPC31

μPD7

DTC1
2SA1
2SC2
2SC6

1703
2605

1. SEMICONDUCTOR LEAD LAYOUTS



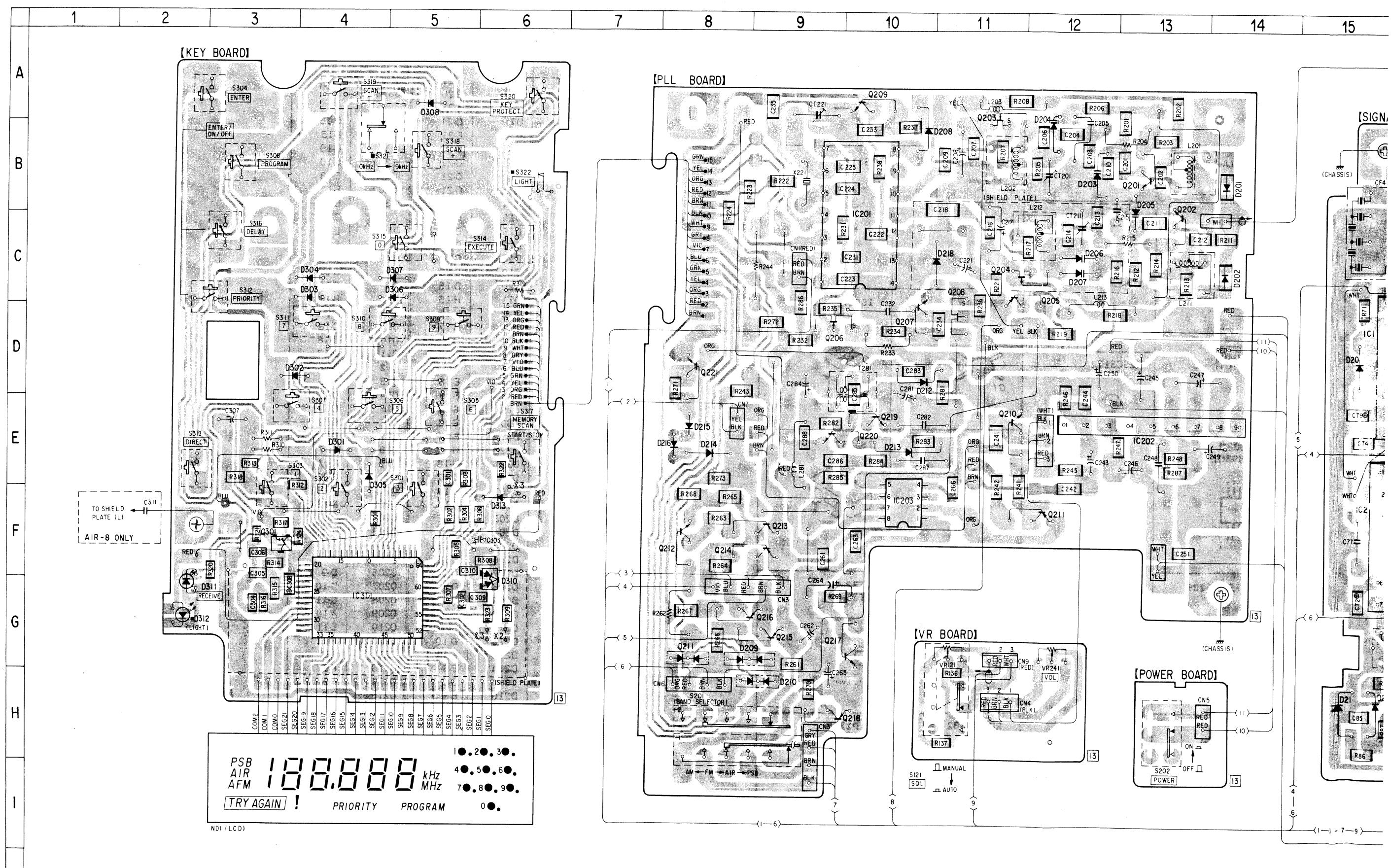
• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D1	H-21	D308	A-5
D2	H-20	D310	G-6
D3	G-21	D311	G-2
D4	G-21	D312	G-2
D5	G-20	D313	F-6
D6	E-21		
D7	D-21	IC1	D-15
D8	E-21	IC2	F-15
D9	D-20	IC3	G-19
D11	C-21	IC201	B-10
D12	C-21	IC202	E-13
D13	C-21	IC203	F-10
D14	D-19	IC301	G-4
D15	D-19		
D16	D-18	Q1	E-21
D17	D-18	Q2	E-20
D18	C-16	Q3	C-19
D19	C-16	Q5	B-21
D20	D-15	Q6	C-19
D21	H-15	Q7	B-19
D22	H-15	Q8	B-17
D23	H-17	Q9	C-18
D24	G-17	Q10	D-18
D25	E-17	Q11	D-17
D26	E-20	Q12	E-17
D27	E-18	Q13	F-16
D28	F-19	Q14	D-17
D29	G-18	Q15	E-17
D30	G-18	Q16	E-19
D31	F-18	Q17	E-18
D32	H-18	Q18	F-17
D33	H-18	Q19	F-17
D39	D-17	Q20	G-20
D201	B-14	Q21	H-18
D202	C-14	Q201	B-13
D203	B-12	Q202	C-13
D204	B-12	Q203	A-11
D205	B-13	Q204	C-11
D206	C-12	Q205	C-12
D207	C-12	Q206	D-9
D208	B-10	Q207	D-10
D209	G-9	Q208	D-11
D210	H-9	Q209	A-10
D211	G-8	Q210	E-11
D212	D-10	Q211	F-12
D213	E-10	Q212	F-8
D214	E-8	Q213	F-9
D215	E-8	Q214	F-9
D216	E-8	Q215	G-9
D217	B-23	Q216	G-9
D218	C-11	Q217	G-10
D301	E-4	Q218	H-9
D302	D-3	Q219	E-10
D303	C-4	Q220	E-10
D304	C-4	Q221	D-8
D305	E-4	Q301	F-3
D306	C-5		
D307	C-5		

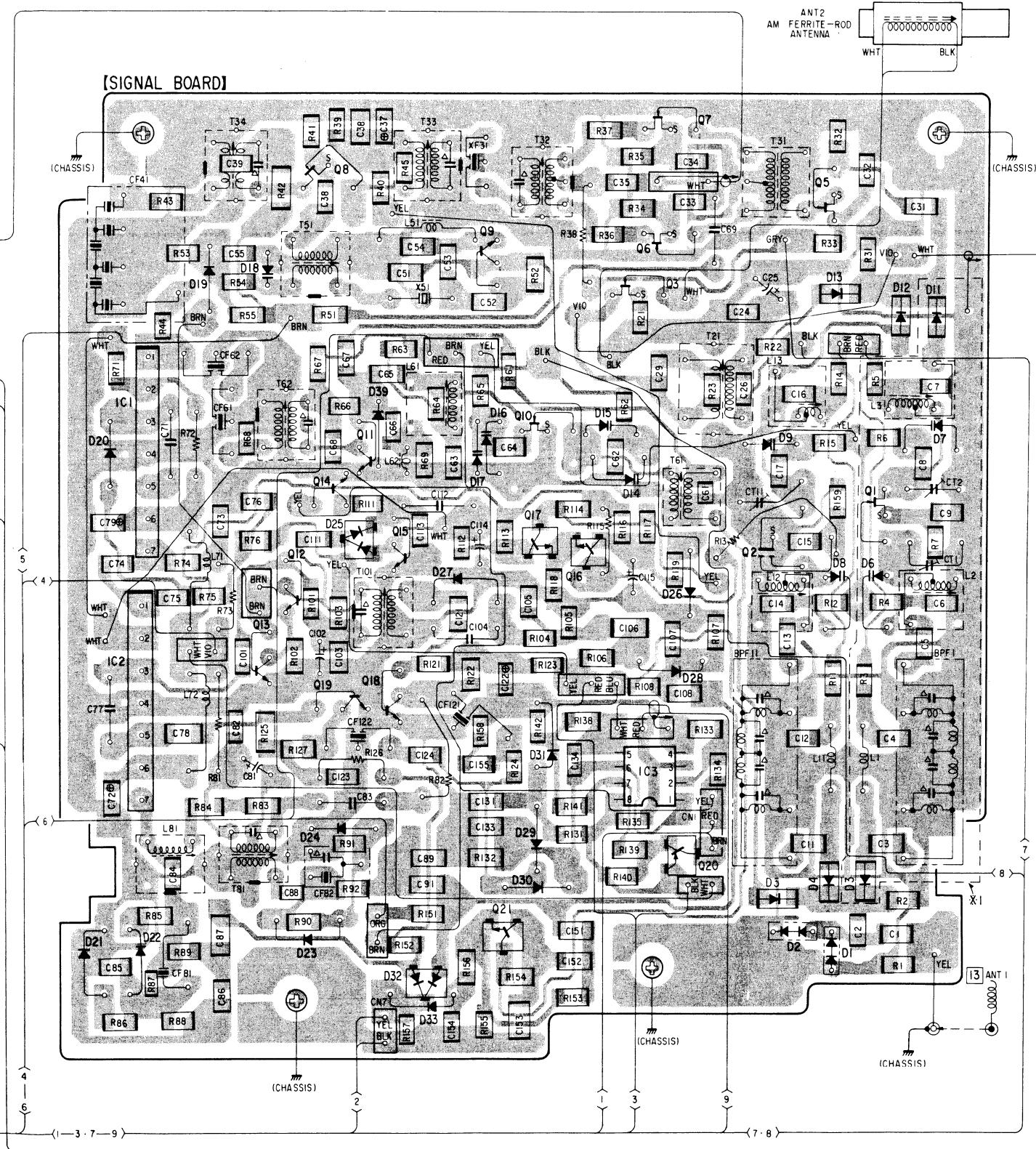
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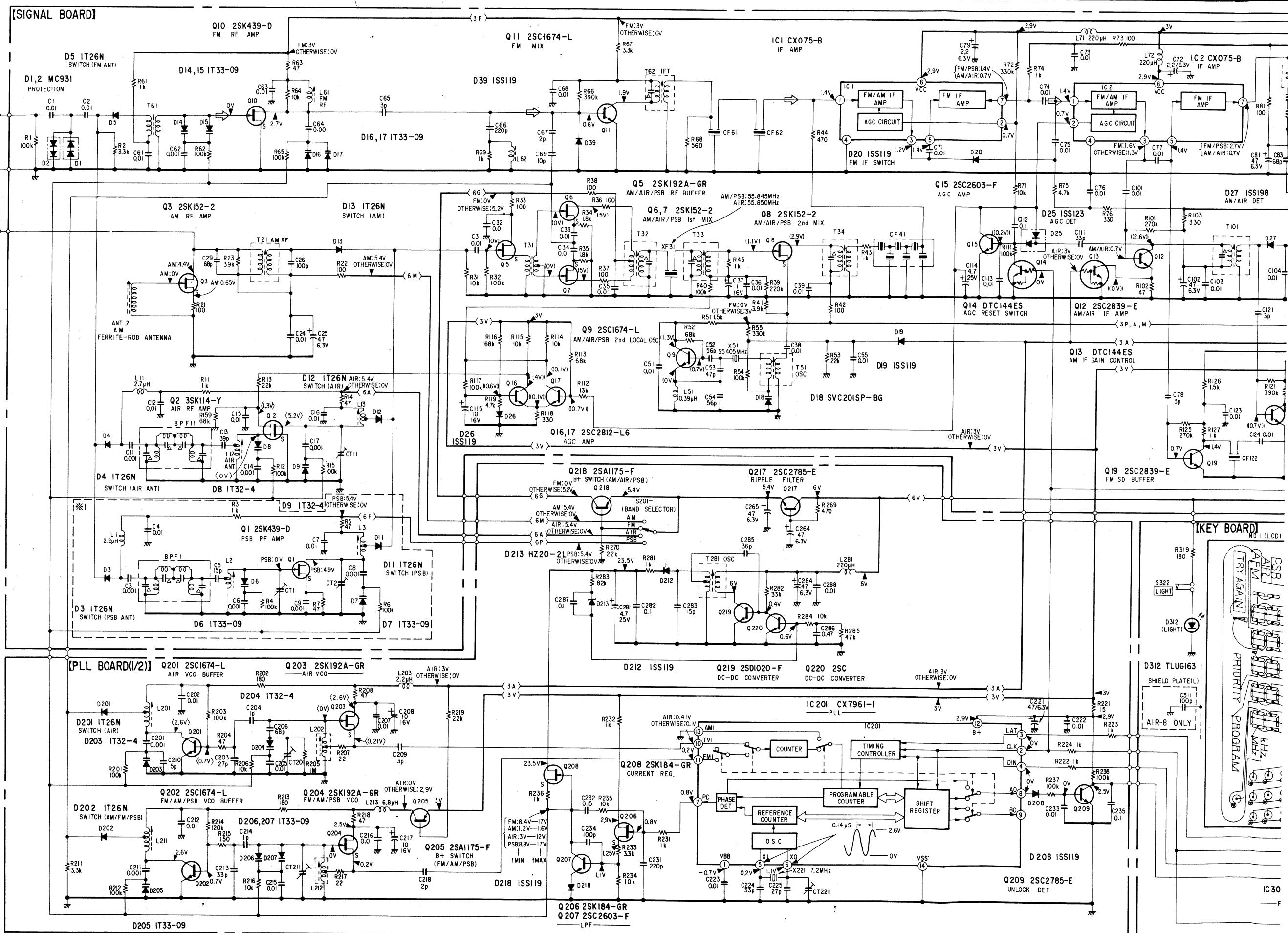
2. PRINTED WIRING BOARDS

- Refer to page 3 for semiconductor lead layouts.
- Refer to page 4 for semiconductor location.



14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
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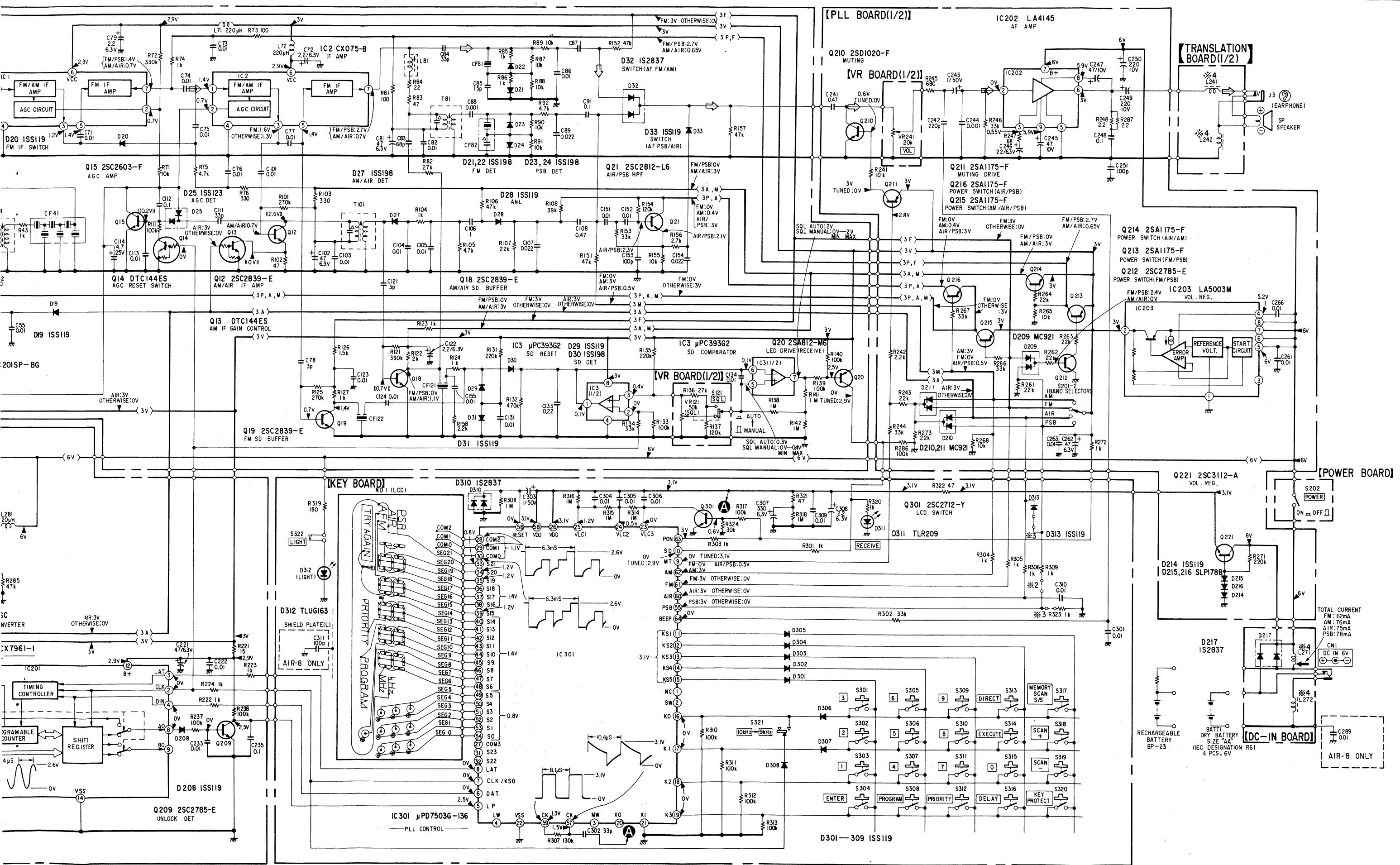
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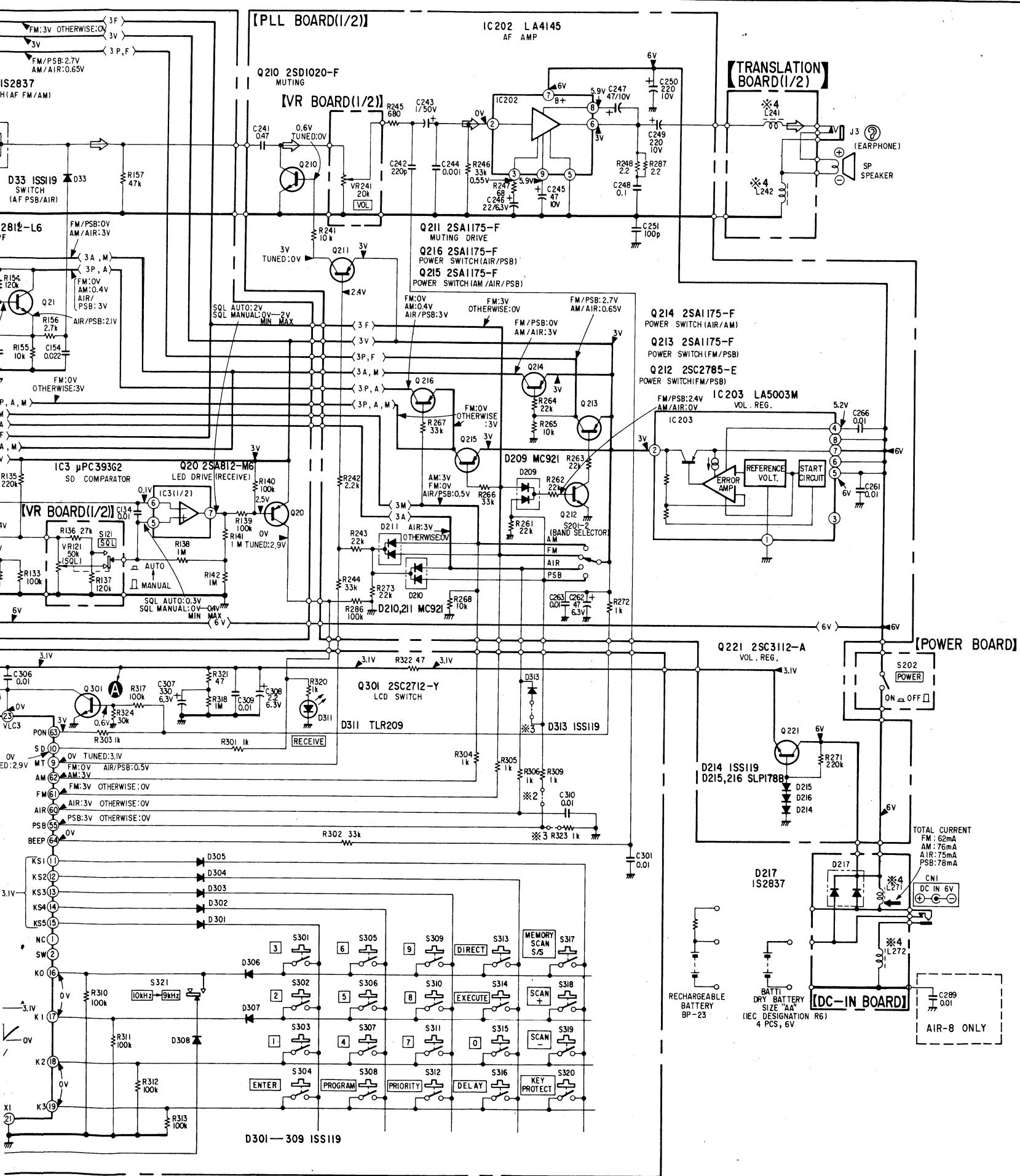
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20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28



Not

Notes:

- All capacitors are in μF unless otherwise noted. pF: $\mu\mu\text{F}$ 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $1/4\text{W}$ or less unless otherwise specified.
 - \triangle : internal component.
 - --- : B+ Line
- Total current is measured at detuned mode with VOL knob turned to the counterclockwise (MIN).
- Power voltage is dc 6V and fed with regulated dc power supply from external power voltage jack.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.

Measured at FM 76,000MHz on LCD.

no mark : FM

() : AM/AIR/PSB

() : AM/AIR

< > : AIR

- Voltages are taken with a VOM (50 $\text{k}\Omega/\text{V}$). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Signal path.

• Switch

Ref. No.	Switch	Position
S121	SQL	MANUAL
S201	BAND SELECTOR	FM
S202	POWER	OFF
S301	3	OFF
S302	2	OFF
S303	1	OFF
S304	ENTER	OFF
S305	6	OFF
S306	5	OFF
S307	4	OFF
S308	PROGRAM	OFF
S309	9	OFF
S310	8	OFF
S311	7	OFF
S312	PRIORiTY	OFF
S313	DIRECT	OFF
S314	EXECUTE	OFF
S315	0	OFF
S316	DELAY	OFF
S317	MEMORY SCAN S/S	STOP
S318	SCAN+	OFF
S319	SCAN-	OFF
S320	KEY PROTECT	OFF
S321	10kHz/9kHz SELECT	10kHz
S322	LIGHT	OFF

NOT

Parts marked * 1 to 4 differ from each model.

	AIR-7		AIR-8
	AEP-1, E model	AEP-2, UK model	
※ 1 (PSB RF CIRCUIT)	mounted on PC board, but not used	used	
※ 2 (R309)	mounted on PC board, but not used	used	
※ 3 (R323, D313)	used	mounted on PC board, but not used	
※ 4 (L21, 22, 241, 242, 271, 272)		shorted	mounted

4. ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μ F, PF: $\mu\mu$ F.RESISTORS:
• All resistors are in ohms.
• F: nonflammableCOILS:
• MMH: mH, UH: μ HSEMICONDUCTORS:
In each case, U: μ , for example:
UA...: μ A..., UPA...: μ PA...,
UPC...: μ PC, UPD...: μ PD...

Ref.No	Part No.	Description
901	*1-508-995-00	PIN, CONNECTOR
902	*1-560-456-00	PIN, CONNECTOR 2P
903	*1-560-466-00	PIN, CONNECTOR 3P
905	*1-560-468-00	PIN, CONNECTOR 5P
906	*1-613-291-11	PC BOARD, DC-IN
907	*1-613-292-11	PC BOARD, JACK
908	1-613-293-11	(AIR-7)...PC BOARD, TRANSLATION
908	1-613-293-21	(AIR-8)...PC BOARD, TRANSLATION
910	*1-613-296-11	PC BOARD, KEY
911	*1-613-297-11	PC BOARD, VR
912	1-562-261-21	CONNECTOR, COAXIAL (BNC)
913	A-3660-519-A	MAINTAINED PCB, SIGNAL
914	A-3661-009-A	MAINTAINED PCB, PLL

ANT1 1-501-322-11 ANTENNA
ANT2 1-402-120-12 ANTENNA, FERRITE-ROD (LW/MW/SW)BPF1 1-235-401-11 FILTER, BAND PASS
BPF11 1-235-402-11 FILTER, BAND PASS

CAPACITOR

C1	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C2	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C3	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C4	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C5	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C6	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C7	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C8	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C9	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C11	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C12	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C13	1-163-107-00	CERAMIC CHIP	39PF	5%	50V
C14	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C15	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C16	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C17	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C24	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C25	1-126-154-11	ELECT	47MF	20%	6.3V
C26	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C27	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C28	1-163-019-00	CERAMIC CHIP	0.0068MF	10%	50V
C29	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C31	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C32	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C33	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C34	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C35	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C36	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C37	1-135-091-00	TANTAL CHIP	1MF	20%	16V
C38	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C39	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C51	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V

CAPACITORS:
MF: μ F, PF: $\mu\mu$ F.RESISTORS:
• All resistors are in ohms.
• F: nonflammableCOILS:
• MMH: mH, UH: μ HSEMICONDUCTORS:
In each case, U: μ , for example:
UA...: μ A..., UPA...: μ PA...,
UPC...: μ PC, UPD...: μ PD...

Ref.No Part No. Description

Ref.No	Part No.	Description
C52	1-163-111-00	CERAMIC CHIP
C53	1-163-109-00	CERAMIC CHIP
C54	1-163-111-00	CERAMIC CHIP
C55	1-163-021-00	CERAMIC CHIP
C61	1-163-021-00	CERAMIC CHIP
C62	1-163-141-00	CERAMIC CHIP
C63	1-163-021-00	CERAMIC CHIP
C64	1-163-141-00	CERAMIC CHIP
C65	1-163-086-00	CERAMIC CHIP
C66	1-163-125-00	CERAMIC CHIP
C67	1-163-085-00	CERAMIC CHIP
C68	1-163-021-00	CERAMIC CHIP
C69	1-162-199-31	CERAMIC
C71	1-161-379-00	CERAMIC
C72	1-135-099-00	TANTAL CHIP
C73	1-163-021-00	CERAMIC CHIP
C74	1-163-021-00	CERAMIC CHIP
C75	1-163-021-00	CERAMIC CHIP
C76	1-163-021-00	CERAMIC CHIP
C77	1-161-379-00	CERAMIC
C78	1-163-086-00	CERAMIC CHIP
C79	1-135-099-00	TANTAL CHIP
C81	1-126-154-11	ELECT
C82	1-163-021-00	CERAMIC CHIP
C83	1-162-219-31	CERAMIC
C84	1-163-105-00	CERAMIC CHIP
C85	1-163-097-00	CERAMIC CHIP
C86	1-163-021-00	CERAMIC CHIP
C87	1-162-638-11	CERAMIC CHIP
C88	1-163-141-00	CERAMIC CHIP
C89	1-163-037-11	CERAMIC CHIP
C91	1-164-004-11	CERAMIC CHIP
C101	1-163-021-00	CERAMIC CHIP
C102	1-126-154-11	ELECT
C103	1-163-021-00	CERAMIC CHIP
C104	1-161-379-00	CERAMIC
C105	1-163-021-00	CERAMIC CHIP
C106	1-162-638-11	CERAMIC CHIP
C107	1-163-037-11	CERAMIC CHIP
C108	1-162-637-11	CERAMIC CHIP
C111	1-163-105-00	CERAMIC CHIP
C112	1-136-165-00	FILM
C113	1-163-021-00	CERAMIC CHIP
C114	1-126-094-11	ELECT
C115	1-126-157-11	ELECT
C121	1-163-086-00	CERAMIC CHIP
C122	1-135-099-00	TANTAL CHIP
C123	1-163-021-00	CERAMIC CHIP
C124	1-163-021-00	CERAMIC CHIP
C133	1-162-993-11	CERAMIC CHIP
C134	1-163-021-00	CERAMIC CHIP

Ref.No Part No. Description

C151	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C152	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C153	1-163-181-00	CERAMIC CHIP	100PF	5%	50V
C154	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C155	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C201	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C202	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C203	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C204	1-163-083-00	CERAMIC CHIP	1PF	0.25PF	50V
C205	1-161-051-00	CERAMIC	0.01MF	10%	25V
C206	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C207	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C208	1-126-157-11	ELECT	10MF	20%	16V
C209	1-163-086-00	CERAMIC CHIP	3PF	0.25PF	50V
C210	1-163-088-00	CERAMIC CHIP	5PF	0.25PF	50V
C211	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C212	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C213	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C214	1-163-083-00	CERAMIC CHIP	1PF	0.25PF	50V
C215	1-161-051				

Ref.No	Part No.	Description	Ref.No	Part No.	Description	Ref.No	Part No.	Description	Ref.No	Part No.	Description	Ref.No	P:			
C310	1-163-021-00	CERAMIC CHIP 0.01MF	D216	8-719-912-43	DIODE SLP178B	Q16	8-729-100-66	TRANSISTOR 2SC1623	R61	1-216-049-00	METAL GLAZE 1K	5%	1/10W	R155 1-		
C311	1-102-973-00	(AIR-8)...CERAMIC 100PF	5%	50V	D217	8-719-100-05	DIODE 1S2837	Q17	8-729-100-66	TRANSISTOR 2SC1623	R62	1-216-097-00	METAL GLAZE 100K	5%	1/10W	R156 1-
CF41	1-527-392-00	FILTER, CERAMIC	D218	8-719-911-19	DIODE ISS119	Q18	8-729-883-92	TRANSISTOR 2SC2839	R63	1-216-017-00	METAL GLAZE 47	5%	1/10W	R157 1-		
CF61	1-567-389-11	FILTER, CERAMIC	D301	8-719-911-19	DIODE ISS119	Q19	8-729-883-92	TRANSISTOR 2SC2839	R64	1-216-073-00	METAL GLAZE 10K	5%	1/10W	R158 1-		
CF62	1-567-389-11	FILTER, CERAMIC	D302	8-719-911-19	DIODE ISS119	Q20	8-729-100-76	TRANSISTOR 2SA812	R65	1-216-097-00	METAL GLAZE 100K	5%	1/10W	R159 1-		
CF81	1-567-050-00	FILTER, CERAMIC	D303	8-719-911-19	DIODE ISS119	Q21	8-729-100-66	TRANSISTOR 2SC1623	R66	1-216-111-00	METAL GLAZE 390K	5%	1/10W	R201 1-		
CF82	1-567-308-11	FILTER, CERAMIC	D304	8-719-911-19	DIODE ISS119	Q201	8-729-178-61	TRANSISTOR 2SC2786	R67	1-216-061-00	METAL GLAZE 3.3K	5%	1/10W	R202 1-		
CF121	1-527-982-00	FILTER, CERAMIC	D305	8-719-911-19	DIODE ISS119	Q202	8-729-178-62	TRANSISTOR 2SC2786-L	R68	1-216-043-00	METAL GLAZE 560	5%	1/10W	R203 1-		
CF122	1-567-415-11	FILTER, CERAMIC	D306	8-719-911-19	DIODE ISS119	Q203	8-729-200-66	TRANSISTOR 2SK192A	R69	1-216-049-00	METAL GLAZE 1K	5%	1/10W	R204 1-		
			D307	8-719-911-19	DIODE ISS119	Q204	8-729-200-66	TRANSISTOR 2SK192A	R71	1-216-073-00	METAL GLAZE 10K	5%	1/10W	R205 1-		
CN1	1-507-954-11	JACK, EXTERNAL POWER (DC IN 6V)	D308	8-719-911-19	DIODE ISS119	Q205	8-729-204-83	TRANSISTOR 2SA1048-GR	R72	1-247-891-00	CARBON 330K	5%	1/4W	R206 1-		
CT1	1-141-298-11	CAP, TRIMMER	D310	8-719-100-05	DIODE 1S2837	Q206	8-729-218-43	TRANSISTOR 2SK184-GR	R73	1-249-405-11	CARBON 100	5%	1/4W	R207 1-		
CT2	1-141-298-11	CAP, TRIMMER	D311	8-719-800-67	DIODE TLR209	Q207	8-729-178-54	TRANSISTOR 2SC2785	R74	1-216-049-00	METAL GLAZE 1K	5%	1/10W	R208 1-		
CT11	1-141-299-11	CAP, TRIMMER	D312	8-719-920-05	DIODE SLP281C-50	Q208	8-729-218-43	TRANSISTOR 2SK184-GR	R75	1-216-065-00	METAL GLAZE 4.7K	5%	1/10W	R211 1-		
CT201	1-141-298-11	CAP, TRIMMER	D313	8-719-911-19	DIODE ISS119	Q209	8-729-500-27	TRANSISTOR 2SC634SP	R76	1-216-037-00	METAL GLAZE 330	5%	1/10W	R212 1-		
CT211	1-141-299-11	CAP, TRIMMER	IC1	8-759-600-75	IC CX075B	Q210	8-729-102-04	TRANSISTOR 2SD1020-F	R81	1-249-405-11	CARBON 100	5%	1/4W	R213 1-		
CT221	1-141-227-00	CAP, CERAMIC TRIMMER	IC2	8-759-600-75	IC CX075B	Q211	8-729-117-54	TRANSISTOR 2SA1175	R82	1-249-422-11	CARBON 2.7K	5%	1/4W	R214 1-		
D1	8-719-000-12	DIODE MC931	IC3	8-759-100-93	IC UPC393G2	Q212	8-729-600-27	TRANSISTOR 2SC634SP	R83	1-216-017-00	METAL GLAZE 47	5%	1/10W	R215 1-		
D2	8-719-000-12	DIODE MC931	IC201	8-757-961-11	IC CX7961A-1	Q213	8-729-117-54	TRANSISTOR 2SA1175	R84	1-216-009-00	METAL GLAZE 22	5%	1/10W	R216 1-		
D3	8-719-123-79	DIODE ISS279	IC202	8-759-801-65	IC LA4145	Q214	8-729-117-54	TRANSISTOR 2SA1175	R85	1-216-049-00	METAL GLAZE 1K	5%	1/10W	R217 1-		
D4	8-719-123-79	DIODE ISS279	IC203	8-759-801-15	IC LA5003M	Q215	8-729-117-54	TRANSISTOR 2SA1175	R86	1-216-049-00	METAL GLAZE 1K	5%	1/10W	R218 1-		
D5	8-719-123-79	DIODE ISS279	IC301	8-759-102-04	IC UPD7503G-136	Q216	8-729-117-54	TRANSISTOR 2SA1175	R87	1-216-073-00	METAL GLAZE 10K	5%	1/10W	R219 1-		
			J2	1-507-917-00	JACK, STEREO (AM EXT ANTENNA)	Q217	8-729-600-27	TRANSISTOR 2SC634SP	R88	1-216-073-00	METAL GLAZE 10K	5%	1/10W	R221 1-		
			J3	1-507-921-00	JACK (EARPHONE)	Q218	8-729-117-54	TRANSISTOR 2SA1175	R89	1-216-073-00	METAL GLAZE 10K	5%	1/10W	R222 1-		
			L1	1-410-320-11	INDUCTOR 2.2UH	Q219	8-729-102-04	TRANSISTOR 2SD1020-F	R90	1-216-073-00	METAL GLAZE 10K	5%	1/10W	R223 1-		
D6	8-713-309-00	DIODE 1T33-09	L12	1-410-502-11	INDUCTOR 2.7UH	Q220	8-729-178-54	TRANSISTOR 2SC2785	R91	1-216-073-00	METAL GLAZE 10K	5%	1/10W	R224 1-		
D7	8-713-309-00	DIODE 1T33-09	L13	1-410-558-11	COIL (WITH CORE)	Q221	8-729-201-83	TRANSISTOR 2SC3112	R92	1-216-065-00	METAL GLAZE 4.7K	5%	1/10W	R231 1-		
D8	8-713-240-00	DIODE 1T32-4	L21	1-407-882-00	(AIR-8)...COIL	Q301	8-729-100-66	TRANSISTOR 2SC1623	R101	1-216-107-00	METAL GLAZE 270K	5%	1/10W	R232 1-		
D9	8-713-240-00	DIODE 1T32-4	L22	1-407-882-00	(AIR-8)...COIL				R102	1-216-017-00	METAL GLAZE 47	5%	1/10W	R233 1-		
D11	8-719-123-79	DIODE ISS279	L51	1-408-903-11	INDUCTOR 0.39UH				R103	1-216-037-00	METAL GLAZE 330	5%	1/10W	R234 1-		
D12	8-719-123-79	DIODE ISS279	L61	1-410-555-11	COIL (WITH CORE)	R1	1-216-097-00	METAL GLAZE 100K	R104	1-216-049-00	METAL GLAZE 1K	5%	1/10W	R235 1-		
D13	8-719-123-79	DIODE ISS279	L12	1-410-558-11	COIL (WITH CORE)	R2	1-216-061-00	METAL GLAZE 3.3K	R105	1-216-065-00	METAL GLAZE 4.7K	5%	1/10W	R236 1-		
D14	8-713-309-00	DIODE 1T33-09	L13	1-410-558-11	COIL (WITH CORE)	R3	1-216-049-00	METAL GLAZE 1K	R106	1-216-089-00	METAL GLAZE 47K	5%	1/10W	R237 1-		
D15	8-713-309-00	DIODE 1T33-09	L21	1-407-882-00	(AIR-8)...COIL	R4	1-216-097-00	METAL GLAZE 100K	R107	1-216-081-00	METAL GLAZE 22K	5%	1/10W	R238 1-		
D16	8-713-309-00	DIODE 1T33-09	L22	1-407-882-00	(AIR-8)...COIL	R5	1-216-017-00	METAL GLAZE 47						R239 1-		
D17	8-713-309-00	DIODE 1T33-09	L51	1-408-903-11	INDUCTOR 0.39UH	R6	1-216-097-00	METAL GLAZE 100K	R108	1-216-748-11	METAL GLAZE 39K	5%	1/10W	R241 1-		
D18	8-719-912-03	DIODE SVC201SP-BG	L61	1-410-555-11	COIL (WITH CORE)	R7	1-216-017-00	METAL GLAZE 47	R111	1-216-097-00	METAL GLAZE 100K	5%	1/10W	R242 1-		
D19	8-719-911-19	DIODE ISS119	L62	1-407-882-00	COIL	R11	1-216-049-00	METAL GLAZE 1K	R112	1-216-076-00	METAL GLAZE 13K	5%	1/10W	R243 1-		
D20	8-719-911-19	DIODE ISS119	L71	1-408-579-31	INDUCTOR 220UH	R12	1-216-097-00	METAL GLAZE 100K	R113	1-216-093-00	METAL GLAZE 68K	5%	1/10W	R244 1-		
D21	8-719-918-88	DIODE ISS198	L72	1-408-579-31	INDUCTOR 220UH	R13	1-249-433-11	CARBON 22K	R114	1-216-073-00	METAL GLAZE 10K	5%	1/10W	R245 1-		
D22	8-719-918-88	DIODE ISS198	L81	1-404-567-11	TRANSFORMER, IF	R14	1-216-017-00	METAL GLAZE 47	R115	1-249-429-11	CARBON 10K	5%	1/4W	R246 1-		
D23	8-719-918-88	DIODE ISS198	L201	1-410-553-11	COIL (

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description	Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
Q16	8-729-100-66	TRANSISTOR 2SC1623	R61	1-216-049-00	METAL GLAZE 1K 5% 1/10W	R155	1-216-073-00	METAL GLAZE 10K 5% 1/10W	R306	1-216-049-00	METAL GLAZE 1K 5% 1/10W
Q17	8-729-100-66	TRANSISTOR 2SC1623	R62	1-216-097-00	METAL GLAZE 100K 5% 1/10W	R156	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	R307	1-216-100-00	METAL GLAZE 130K 5% 1/10W
Q18	8-729-883-92	TRANSISTOR 2SC2839	R63	1-216-017-00	METAL GLAZE 47 5% 1/10W	R157	1-216-089-00	METAL GLAZE 47K 5% 1/10W	R308	1-216-121-00	METAL GLAZE 1M 5% 1/10W
Q19	8-729-883-92	TRANSISTOR 2SC2839	R64	1-216-073-00	METAL GLAZE 10K 5% 1/10W	R158	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	R309	1-216-049-00	METAL GLAZE 1K 5% 1/10W
Q20	8-729-100-76	TRANSISTOR 2SA812	R65	1-216-097-00	METAL GLAZE 100K 5% 1/10W	R159	1-216-093-00	METAL GLAZE 68K 5% 1/10W	R310	1-249-441-11	CARBON 100K 5% 1/4W
Q21	8-729-100-66	TRANSISTOR 2SC1623	R66	1-216-111-00	METAL GLAZE 390K 5% 1/10W	R201	1-216-097-00	METAL GLAZE 100K 5% 1/10W	R311	1-249-441-11	CARBON 100K 5% 1/4W
Q201	8-729-178-61	TRANSISTOR 2SC2786	R67	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	R202	1-216-031-00	METAL GLAZE 180 5% 1/10W	R312	1-216-097-00	METAL GLAZE 100K 5% 1/10W
Q202	8-729-178-62	TRANSISTOR 2SC2786-L	R68	1-216-043-00	METAL GLAZE 560 5% 1/10W	R203	1-216-097-00	METAL GLAZE 100K 5% 1/10W	R313	1-216-097-00	METAL GLAZE 100K 5% 1/10W
Q203	8-729-200-66	TRANSISTOR 2SK192A	R69	1-216-049-00	METAL GLAZE 1K 5% 1/10W	R204	1-249-401-11	CARBON 47 5% 1/4W	R314	1-216-121-00	METAL GLAZE 1M 5% 1/10W
Q204	8-729-200-66	TRANSISTOR 2SK192A	R71	1-216-073-00	METAL GLAZE 10K 5% 1/10W	R205	1-216-121-00	METAL GLAZE 1M 5% 1/10W	R315	1-216-121-00	METAL GLAZE 1M 5% 1/10W
Q205	8-729-204-83	TRANSISTOR 2SA1048-GR	R72	1-247-891-00	CARBON 330K 5% 1/4W	R206	1-216-073-00	METAL GLAZE 10K 5% 1/10W	R316	1-216-121-00	METAL GLAZE 1M 5% 1/10W
Q206	8-729-218-43	TRANSISTOR 2SK184-GR	R73	1-249-405-11	CARBON 100 5% 1/4W	R207	1-216-009-00	METAL GLAZE 22 5% 1/10W	R317	1-216-097-00	METAL GLAZE 100K 5% 1/10W
Q207	8-729-178-54	TRANSISTOR 2SC2785	R74	1-216-049-00	METAL GLAZE 1K 5% 1/10W	R208	1-216-017-00	METAL GLAZE 47 5% 1/10W	R318	1-216-121-00	METAL GLAZE 1M 5% 1/10W
Q208	8-729-218-43	TRANSISTOR 2SK184-GR	R75	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	R211	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	R319	1-249-408-11	CARBON 180 5% 1/4W
Q209	8-729-600-27	TRANSISTOR 2SC634SP	R76	1-216-037-00	METAL GLAZE 330 5% 1/10W	R212	1-216-097-00	METAL GLAZE 100K 5% 1/10W	R320	1-216-049-00	METAL GLAZE 1K 5% 1/10W
Q210	8-729-102-04	TRANSISTOR 2SD1020-F	R81	1-249-405-11	CARBON 100 5% 1/4W	R213	1-216-031-00	METAL GLAZE 180 5% 1/10W	R321	1-216-017-00	METAL GLAZE 47 5% 1/10W
Q211	8-729-117-54	TRANSISTOR 2SA1175	R82	1-249-422-11	CARBON 2.7K 5% 1/4W	R214	1-216-099-00	METAL GLAZE 120K 5% 1/10W	R322	1-216-017-00	METAL GLAZE 47 5% 1/10W
Q212	8-729-600-27	TRANSISTOR 2SC634SP	R83	1-216-017-00	METAL GLAZE 47 5% 1/10W	R215	1-249-407-11	CARBON 150 5% 1/4W	R323	1-216-049-00	METAL GLAZE 1K 5% 1/10W
Q213	8-729-117-54	TRANSISTOR 2SA1175	R84	1-216-009-00	METAL GLAZE 22 5% 1/10W	R216	1-216-073-00	METAL GLAZE 10K 5% 1/10W	R324	1-216-084-00	METAL GLAZE 30K 5% 1/10W
Q214	8-729-117-54	TRANSISTOR 2SA1175	R85	1-216-049-00	METAL GLAZE 1K 5% 1/10W	R217	1-216-009-00	METAL GLAZE 22 5% 1/10W	S201	1-554-955-11	SWITCH, ROTARY (BAND SELECTOR)
Q215	8-729-117-54	TRANSISTOR 2SA1175	R86	1-216-049-00	METAL GLAZE 1K 5% 1/10W	R218	1-216-017-00	METAL GLAZE 47 5% 1/10W	S202	1-554-957-11	SWITCH, PUSH (1 KEY) (POWER)
Q216	8-729-117-54	TRANSISTOR 2SA1175	R87	1-216-073-00	METAL GLAZE 10K 5% 1/10W	R219	1-216-081-00	METAL GLAZE 22K 5% 1/10W	S301	1-553-349-00	SWITCH, PUSH (3)
Q217	8-729-600-27	TRANSISTOR 2SC634SP	R88	1-216-073-00	METAL GLAZE 10K 5% 1/10W	R221	1-216-005-00	METAL GLAZE 15 5% 1/10W	S302	1-553-349-00	SWITCH, PUSH (2)
Q218	8-729-117-54	TRANSISTOR 2SA1175	R89	1-216-073-00	METAL GLAZE 10K 5% 1/10W	R222	1-216-049-00	METAL GLAZE 1K 5% 1/10W	S303	1-553-349-00	SWITCH, PUSH (1)
Q219	8-729-102-04	TRANSISTOR 2SD1020-F	R90	1-216-073-00	METAL GLAZE 10K 5% 1/10W	R223	1-216-049-00	METAL GLAZE 1K 5% 1/10W	S304	1-553-349-00	SWITCH, PUSH (ENTER)
Q220	8-729-178-54	TRANSISTOR 2SC2785	R91	1-216-073-00	METAL GLAZE 10K 5% 1/10W	R224	1-216-049-00	METAL GLAZE 1K 5% 1/10W	S305	1-553-349-00	SWITCH, PUSH (6)
Q221	8-729-201-83	TRANSISTOR 2SC3112	R92	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	R231	1-216-049-00	METAL GLAZE 1K 5% 1/10W	S306	1-553-349-00	SWITCH, PUSH (5)
Q301	8-729-100-66	TRANSISTOR 2SC1623	R102	1-216-017-00	METAL GLAZE 47 5% 1/10W	R232	1-216-049-00	METAL GLAZE 1K 5% 1/10W	S307	1-553-349-00	SWITCH, PUSH (4)
RESISTOR											
R1	1-216-097-00	METAL GLAZE 100K 5% 1/10W	R103	1-216-037-00	METAL GLAZE 330 5% 1/10W	R233	1-249-423-11	CARBON 3.3K 5% 1/4W	S308	1-553-349-00	SWITCH, PUSH (PROGRAM)
R2	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	R104	1-216-049-00	METAL GLAZE 1K 5% 1/10W	R234	1-216-073-00	METAL GLAZE 10K 5% 1/10W	S309	1-553-349-00	SWITCH, PUSH (9)
R3	1-216-049-00	METAL GLAZE 1K 5% 1/10W	R105	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	R235	1-216-073-00	METAL GLAZE 10K 5% 1/10W	S310	1-553-349-00	SWITCH, PUSH (8)
R4	1-216-097-00	METAL GLAZE 100K 5% 1/10W	R106	1-216-089-00	METAL GLAZE 47K 5% 1/10W	R236	1-216-049-00	METAL GLAZE 1K 5% 1/10W	S311	1-553-349-00	SWITCH, PUSH (7)
R5	1-216-017-00	METAL GLAZE 47 5% 1/10W	R107	1-216-081-00	METAL GLAZE 22K 5% 1/10W	R237	1-216-097-00	METAL GLAZE 100K 5% 1/10W	S312	1-553-349-00	SWITCH, PUSH (PRIORITY)
R6	1-216-097-00	METAL GLAZE 100K 5% 1/10W	R108	1-216-748-11	METAL GLAZE 39K 5% 1/10W	R238	1-216-097-00	METAL GLAZE 100K 5% 1/10W	S313	1-553-349-00	SWITCH, PUSH (DIRECT)
R7	1-216-017-00	METAL GLAZE 47 5% 1/10W	R111	1-216-097-00	METAL GLAZE 100K 5% 1/10W	R241	1-216-073-00	METAL GLAZE 10K 5% 1/10W	S314	1-553-349-00	SWITCH, PUSH (EXECUTE)
R11	1-216-049-00	METAL GLAZE 1K 5% 1/10W	R112	1-216-076-00	METAL GLAZE 13K 5% 1/10W	R242	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	S315	1-553-349-00	SWITCH, PUSH (0)
R12	1-216-097-00	METAL GLAZE 100K 5% 1/10W	R113	1-216-093-00	METAL GLAZE 68K 5% 1/10W	R243	1-216-081-00	METAL GLAZE 22K 5% 1/10W	S316	1-553-349-00	SWITCH, PUSH (DELAY)
R13	1-249-433-11	CARBON 22K 5% 1/4W	R114	1-216-073-00	METAL GLAZE 10K 5% 1/10W	R244	1-249-435-11	CARBON 33K 5% 1/4W	S317	1-553-349-00	SWITCH, PUSH (MEMORY SCAN S/S)
R14	1-216-017-00	METAL GLAZE 47 5% 1/10W	R115	1-249-429-11	CARBON 10K 5% 1/4W	R245	1-216-045-00	METAL GLAZE 680 5% 1/10W	S318	1-553-349-00	SWITCH, PUSH (SCAN +)
R15	1-216-097-00	METAL GLAZE 100K 5% 1/10W	R116	1-216-093-00	METAL GLAZE 68K 5% 1/10W	R246	1-216-085-00	METAL GLAZE 33K 5% 1/10W	S319	1-553-349-00	SWITCH, PUSH (SCAN -)
R21	1-216-025-00	METAL GLAZE 100 5% 1/10W	R117	1-216-097-00	METAL GLAZE 100K 5% 1/10W	R247</td					